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ABSTRACT

This report covering the period 1974 to 1976 is the most recent in a series of reports prepared for the International Conference on Education, which is held periodically in Geneva, Switzerland under the auspices of UNESCO. Part 1 describes the present organization and administration of education in the United States. Separate sections focus in turn on general principles of American education, the system of educational administration, American educational structure and organization, school curriculum, and teacher education. Part 2 contains a progress report on developments in U.S. education during the period 1974-76. The first section provides information on trends and new policy orientations resulting from recent federal and state legislation. The second section consists of selected statistics on American education compiled by the National Center for Education Statistics to show developments and trends in various aspects of U.S. education. The third section focuses on the development of educational research and information services. The appendix includes a brief tabulation of major educational legislation enacted during the 1974-76 period, a directory of the Educational Resources Information Center (ERIC) clearinghouses, and a list of selected educational publications published in the U.S. during the 1974-76 period. (Author/JG)

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PROGRESS OF EDUCATION IN THE UNITED STATES OF AMERICA 1974-75 1975-76

Report for the Thirty-Sixth International Conference of Education, Sponsored by the United Nations Educational, Scientific, and Cultural Organization, International Bureau of Education

EA 009 905

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Foreword

This report covering the period 1974 to 1976 is the most recent in the series prepared for the International Conference on Education that has been held in Geneva, Switzerland, since 1934 under the auspices of the International Bureau of Education (IBE), now a part of UNESCO.

Part I provides a description of the present organization and administration of education in the United States.

Part II contains a progress report on developments that have occurred in U.S. education during the period 1974 to 1976. The first section provides information on trends and new policy orientations resulting from recent Federal and State legislation. The second section consists of selected statistics on American education compiled by the National Center for Education Statistics to show developments and trends in various aspects of U.S. education. The third section focuses on the development of educational research and information services, in response to the special subject of the 1977 Conference, "the problem of information at the national and international level posed by the improvement of educational systems."

The appendixes include a brief tabulation of major legislation enacted during the period under review, a directory of the Educational Resources Information Center (ERIC) clearinghouses now in operation, and a list of selected references related to education that were published in the United States during the period 1974 to 1976.

This report is being made available in full in four languages: English, French, Spanish, and Russian. Summary versions will be available in Arabic, Chinese, Japanese, and Portuguese. The various language versions are useful not only to the representatives of the 142 member states of UNESCO, most of which will be represented at the International Conference on Education in Geneva in September 1977, but also to the thousands of visitors from abroad who seek information from the U.S. Office of Education annually and to non-English speaking educators and policymakers in many other countries who are interested in educational development in the United States.

Robert Leestma
Associate Commissioner
for Institutional Development
and International Education

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Part I:
Organization and Structure of the Educational System

1. GENERAL PRINCIPLES[1]

The authority for education in the United States is decentralized. The 10th amendment to the Constitution provides that "the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." Since responsibility for education is not mentioned in the Constitution, it is legally considered delegated to the States. Thus, each State has the right and responsibility to organize and operate its educational system as it deems appropriate--subject to constitutional guarantees of the rights and privileges of U.S. citizens.

State statutory provisions for establishment of institutions of public education vary greatly among the States. Some are quite specific; others simply mention this responsibility in broad terms. Considerable responsibility is often vested in local education authorities. Despite various differences among the several States, in practice the organizational patterns of education in the 50 States are similar as a result of such common social and economic forces as the need to prepare students for employment and higher education, accreditation requirements, and the regulations governing State and Federal funding. As a result of either State or Federal legislation, public education in the United States is free at least through completion of high school (grade 12). It is compulsory, usually from the age of 6 to 16, and it guarantees equality of access and of educational opportunity to both boys and girls and to all minority groups. Moreover, public education has a long tradition of coeducation.

Legislation also provides for establishment of private schools on every level, subject to State licensing and accreditation regulations. These institutions may receive limited governmental aid for specialized purposes but are for the most part financially autonomous.

The decentralized nature, pluralistic character, and democratic principles of American education are well suited to the large and complex national situation. The diversity and flexibility that historically have characterized the American approach to education have provided free public education through the secondary level for the vast majority of American youth while at the same time creating sufficient respect for learning and enough opportunities for its future nurture so that considerable numbers of intellectually gifted students have been able to achieve international prominence among the world's literary, scientific, social, and political leaders.

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[1] Part I is organized according to a format provided by the International Bureau of Education to facilitate information storage and retrieval and the compilation of a collection of "country educational profiles."

2. SYSTEM OF ADMINISTRATION

Although administration of education in the United States is decentralized, significant roles are played by officials and other citizens on the Federal as well as on the State and local levels.

ROLE OF THE FEDERAL GOVERNMENT

The role of the Federal Government in education is to provide encouragement, financial support, and leadership on educational issues of broad national concern, as appropriate within legislative mandates and constitutional constraints. It has the responsibility also of safeguarding the right of every citizen to equal access to free public education and to equality of educational opportunity. While a number of Federal departments and agencies have educational activities of one kind or another, the one most extensively involved in education matters is the Department of Health, Education, and Welfare (DHEW).

The Education Division of this Department, headed by the Assistant Secretary for Education, is comprised of the U.S. Office of Education (OE), the National Institute of Education (NIE), and the Office of the Assistant Secretary for Education (ASE).

The Office of Education is both the oldest and the largest unit in the Education Division. Headed by the Commissioner of Education, OE has primary responsibility for administering approximately 120 programs that have been legislated by the Congress in pursuit of particular educational goals. A number of current examples of such legislation are given in part II of this report.

The National Institute of Education, headed by a director, was established in 1972 by legislation concerned with the need for "more dependable knowledge about the process of learning and education." Its mandate calls for NIE to provide leadership in the conduct and support of scientific inquiry into the educational process. NIE thus functions as the focal point of Government-supported research in education. It also seeks to disseminate improved education practices and products. A National Council on Educational Research provides NIE with general policy guidance and reviews Institute operations.

The Office of the Assistant Secretary for Education coordinates the policies of the Education Division and closely related activities of constituent program units and is directly responsible for the following three programs of special national significance:

- The National Center for Education Statistics (NCES), which collects and disseminates statistics and other data related to education in the United States and in other nations and conducts and publishes reports on specialized analyses of the meaning and significance of such statistics. (See part II, chapter 3, for further information about NCES.)

- The Fund for the Improvement of Postsecondary Education (FIPSE), which is a grant-making program modeled on the foundation concept. Its mission is to help "improve postsecondary educational opportunities by providing assistance to encourage the reform, innovation, and improvement of postsecondary education."

- The Federal Interagency Committee on Education (FICE), which helps coordinate education activities of Federal agencies and advises the Secretary of DHEW on education issues. FICE representatives from some 30 agencies meet regularly under the chairmanship of the Assistant Secretary for Education. FICE subcommittees work on critical education issues shared by several Federal agencies--e.g., education for the disadvantaged, education technology, education and work, research and development, and education consumer protection. (See part II, chapter 3, for further information about FICE.)

ROLE OF THE STATE GOVERNMENT IN ELEMENTARY AND SECONDARY EDUCATION

On the State level, each State legislature enacts laws pertaining to elementary and secondary education. Within the context of these laws, State educational policy and requirements for the elementary and secondary school levels are determined in most States by a State Board of Education and carried out under the leadership of a Chief State School Officer[1] and a staff of professional educators and support personnel in the State Department of Education.

Methods of appointment to the State Boards of Education differ according to State law and tradition. In some States, members are elected directly by the people; in others, they are appointed by the Governors, and in various cases some school board members have status ex officio by virtue of other positions they hold.

The Chief State School Officer is appointed by the State Board of Education in 27 States, elected by popular vote in 18 States, and appointed by the Governor in 5 States. The duties of the office normally include varying combinations of such functions as distributing State funds to local education authorities (an estimated 43 percent of all funds expended in elementary and secondary education in the United States in 1975-76 came from State sources), administering or interpreting school laws, certifying teachers, helping improve educational standards through inservice training programs, and providing advisory services to local superintendents and school boards.

There are strong national associations of both State Boards of Education (the National Association of State Boards of Education) and of Chief State School Officers (the Council of Chief State School Officers). Each is an important interest group on the national scene in relation to Federal education legislation and policy.

ROLE OF LOCAL AUTHORITIES IN ELEMENTARY AND SECONDARY EDUCATION

Each State (except Hawaii) has provided for the establishment of local administrative districts and vested them with extensive authority and responsibility for establishing and regulating the schools in their districts. Each local school district has a board of education, usually made up of five to seven members who have been appointed by higher officials or elected by citizens of the school district. Within the limits of State policy, the board operates the local school system through the school superintendent and his staff.

The functions of the board of education in determining educational policies, and of the superintendent of schools in executing these policies, include a broad range of duties and responsibilities. Together, the board and the superintendent are responsible for preparing the school budget. They usually have considerable latitude within broad State policy to determine most aspects of the curriculum. They are responsible for hiring teachers and other school personnel, providing and maintaining school buildings, purchasing school equipment and supplies, and, in most cases, providing transportation facilities for pupils who live beyond a reasonable walking distance from school. Their duties also include enacting rules and regulations consistent with State law and regulations of the State Department of Education governing operation of the schools. Thus, the limitations on the actions of school boards are those established by the State legislature and by the State education agencies, which have in most cases prescribed minimum standards for all local school districts.

School systems vary in size from small ones in rural areas, with a single one-room elementary school, to those in metropolitan areas with hundreds of schools of various kinds and thousands of teachers. In some States an intermediate school district has sometimes been established between the State Department of Education and the local school districts, not to administer schools but to provide services to local school systems that would not otherwise be available--consultative, advisory, and statistical services and regulatory functions. Some also provide operation of special classes, supervision of instruction, health supervision, attendance services, and pupil transportation.

Ability to provide improved educational facilities and opportunities more economically in larger school districts than in smaller ones continues to be the major reason for consolidation of school districts. In 1975-76, the United States had an estimated 16,400 school districts that together raised an estimated 48 percent of all the funds expended on the Nation's public schools.

ADMINISTRATION OF HIGHER EDUCATION [2]

Generally speaking, there are three main kinds of degree-granting institutions of higher education in the United States: the 2-year community or junior college, the 4-year undergraduate college, and the uni-

versity, which normally includes undergraduate education as well as graduate and professional education. There are both public and private institutions in each category, with no official or implied distinction in quality between them. Both categories include a wide range of institutions.

Higher education institutions, both public and private, receive their authority to function and to grant degrees from the State in which they are located.[2] This authority is given either in the State constitution or, more often, by an act of the State legislature. The Federal Government exercises no direct control over the establishment of institutions or over the standards they maintain except in the case of those concerned with the preparation of career officers for the military. In specific areas such as enforcement of programs of the Civil Rights Act related to higher education, however, the Federal Government's influence can be strong.

Most States now have some form of statewide policy planning and coordination system to guide the development of public higher education within the State. The most common kinds of arrangements for the purpose are coordinating boards and consolidated governing boards. In most statewide systems individual campuses have high degrees of institutional autonomy within the policies and overall plans established by State and/or institutional boards.

Most of the larger States have highly developed statewide systems of higher education. For example, California has a planned, three-tiered system: the California Community Colleges, with 105 2-year institutions; the California State University and Colleges, with 19 institutions; and the University of California, with 9 campuses. The State University of New York represents a single, coordinated system of a total of 64 2-year, 4-year, and graduate and professional institutions. In both States, individual institutions have a high degree of autonomy within the established plans and policies.

Nearly all higher education institutions receive some form of financial support from both State and Federal Governments, although public institutions generally receive a substantially higher proportion of their budget from public funds. Other sources of income for both public and private institutions are student tuition and fees, endowment earnings, and contributions from philanthropic foundations and individuals. Many public community colleges, particularly those drawing students from several school districts, receive the bulk of their public funds from a separate community college district established for each institution for this purpose. In a growing number of States, public community colleges receive more than half their funds from their State Government.

The principal internal policy and financial decisions affecting colleges and universities in the United States are made by their boards of trustees (sometimes called boards of regents). The procedures for selecting members of the board are, in most instances, stated in the institution's founding charter, and depending upon the institution, members may serve either specific limited terms or may be appointed for life. Public institutions may have trustees who are elected or who have

been appointed by the Governor of the State; private institutions, nondenominational or religious, usually have representatives of the institution's founding body. In recent years, many boards of trustees, both public and private, have attempted to build into their boards wide representation of the diverse elements that make up the institution's academic and social environment.

NOTES

[1] The term used nationally for this official. In the individual States, the term is State Commissioner (or Superintendent) of Education (or Schools or Public Instruction).

[2] This section relies heavily on: W. Todd Furniss, ed., *American Universities and Colleges*, 11th ed. Washington, D.C.: American Council on Education, 1975. pp. 8-10.

3. STRUCTURE AND ORGANIZATION [1]

Education in the United States is organized on three principal levels: the elementary (including preschool and primary), the secondary, and the postsecondary. (See figure 1.) In addition, programs of adult and continuing education are available in such variety that it is possible for American citizens to be enrolled in structured programs or participate in informal programs of education and learning throughout their lives.

Compulsory education begins in most States at age 6 and continues usually through age 16. Most young people, however, spend considerably more time in school than the minimum number of years required by law. In fall 1975, for example, 87 percent of all 5-year-olds were enrolled in a preschool or first grade, and approximately 75 percent of all 17-year-olds had completed the 12-year elementary-secondary school sequence and had earned a high school diploma. Moreover, 46.9 percent of young people between 18 and 19 years of age and 22.4 of those aged 20 to 24 were still in school. (See part II, chapter 2.)

On the primary and secondary levels, the academic year usually begins in early September and continues until mid-June. The school day is of approximately 6 hours' duration, usually during the period from 8:30 a.m. to 3:30 p.m. In most instances, particularly at the secondary level, students are expected to do some additional study and school assignments outside the school period. On the postsecondary level, the academic calendar is much more flexible. The norm for a full-time student is 2 semesters of approximately 15 or 16 weeks each per academic year, but there are several variations on this pattern, including the trimester system (3 per year) and the quarter system (4 per year). In the latter two patterns, the student normally does not attend school during the entire year but rather 2 out of 3 trimesters or 3 out of 4 quarters.

ELEMENTARY EDUCATION

Elementary education in the United States consists of 1 or 2 years of preschool (most commonly kindergarten) and 6 or 8 years of primary education.

Most American public school systems provide kindergarten classes for children 5 years of age. Some also provide nursery school education for children 4 years old and younger. The Head Start Program, financed in part from Federal funds, is designed primarily for children from poor families, and exists in about one school district in four.

Preschool education programs maintain a close relationship with the home and parents and aim to give the child useful experiences that will prepare him or her for elementary school. The programs are flexible and are designed to help the child grow in self-reliance, learn to get along with others, and form good work and play habits.

Although primary education may consist of 6 or 8 grades, the 6-grade elementary school is now more popular. The main purpose of the primary school is the general development of children from 6 to 12 or 14 years of age (depending on whether the school is a 6- or 8-year elementary school). The program aims to help the pupils acquire basic skills, knowledge, and positive attitudes toward learning. Emphasis is placed upon the growth of the individual child and the relation of the child's progress to his or her needs and abilities. The traditional subjects are considered tools for learning, and the teacher helps the child recognize problems, work out solutions, and evaluate the results. Many schools have ungraded classes in the first few years so that children may progress at their own speed in different subjects.

During the 1960's the middle school concept began to take form in U.S. education. A typical middle school includes grades 5 or 6 through 8, provides team teaching and other staffing patterns that vary from the usual junior high school patterns, and emphasizes gradual independence for students. Its purpose is to serve the educational needs of students in the early adolescent period, between 10 and 14 years old. Middle schools now number over 3,000 out of a total of over 60,000 elementary schools.

SECONDARY EDUCATION

Secondary education in the United States either begins at grade 7 or grade 9, depending upon whether the elementary education of a particular area extends through grade 6 or grade 8.

As shown in figure 1, in the 8-4 plan used in many schools, students pursue grades 1 through 8 in an elementary school and grades 9 through 12 in a secondary school. The 6-3-3 plan provides for an elementary school of 6 grades and an intermediate (junior) and senior high school of 3 grades each. Some communities consider that intermediate schools ease the transition from elementary to secondary schools. Smaller communities sometimes use the 6-6 plan with 6 years each for both the elementary and secondary school programs. The purpose of the different organizational plans is to make the best use of a school system's physical facilities, staff, and instructional tools within the framework of the system's established educational goals.

During the early secondary years most students are going through the physical and emotional changes of puberty. Many are also making tentative choices of career goals. These years are therefore a period in which school guidance and counseling services are of considerable importance to the pupils' physical, emotional, academic, and career development.

By the beginning of grade 10, most pupils have decided whether they will follow a primarily academic program leading to university entrance, a vocational program leading to employment or specialized postsecondary training, or a general program which combines elements of both the academic and the vocational program. In recent years, the so-called general

program has been criticized as being in many instances neither sufficiently academic to prepare pupils for programs of college or university study nor sufficiently job-oriented to prepare them for employment.

All secondary school programs lead to the high school diploma and are offered in the same comprehensive high school in most school districts. This fact facilitates transfer from one program to another and provides the flexibility for students to build individual schedules--sometimes with the help of computers--that combine highly desirable aspects of different curricular tracks. It is not unusual for a medium-sized comprehensive high school to offer 200 or more different courses. The comprehensive high school also provides the opportunity for young people with widely different career interests and a variety of social and economic backgrounds to have regular contact with each other.

Most secondary school students have completed the minimum years of schooling required by law a year or more before graduating from high school. More than three-quarters of them remain in school, however, until they receive the high school diploma at the end of grade 12.

One reason for this is the flexibility of the American senior high school both in academic and vocational dimensions. In a growing number of schools, academically gifted pupils can take several additional hours per week of advanced science or mathematics during their last 2 years of high school. Some secondary schools offer language courses not only in French, German, and Spanish, but also in Russian and Chinese, for example. In many instances, pupils taking advanced courses receive college or university credit.

In an increasing number of schools, secondary students of both sexes who are interested in programs of vocational-technical education have a wide selection of job-related courses. Moreover, many schools provide the opportunity for school-coordinated work-study programs. Pupils enrolled in these programs spend part of the day in school and part of the day on a job. It is possible in a growing number of school districts to complete high school graduation requirements in accelerated programs of study and thus graduate 1 or even 2 semesters early. Pupils who leave school before earning their high school diploma may work toward it at little or no financial cost in evening programs. A wide variety of summer study and enrichment programs is also available on all levels of education.

POSTSECONDARY EDUCATION

In fall 1976, there were 3,074 higher education institutions in the United States that were authorized to grant academic degrees. Of this number, 1,928 were 4-year colleges and universities and 1,146 were 2-year community or junior colleges.[2] In addition, more than 8,300 nonacademic postsecondary schools in both the public and private sectors were offering job training in a wide variety of occupations. Normally, these schools do not grant academic degrees but offer certificates or diplomas of completion of training in a given trade or skill.[3]

The many and diverse degree-granting institutions in the United States comprise a broad spectrum of academic traditions, philosophies, and goals. More than half (1,607) are private institutions originally established by particular groups of citizens for specific social, educational, or religious purposes. A certain coherence and unity are maintained among so many different institutions through the work of accrediting agencies and associations, which are voluntary bodies established by institutions, professions, or specialized fields to develop and maintain standards. The Federal and State Governments also require certain standards as a condition of financial assistance. Moreover, the professional integrity of the teaching staff as well as the demands of the economy for qualified graduates motivate most institutions to monitor carefully the quality of their institutional programs. Higher education institutions offer degrees on several levels.

The Associate's Degree[4]

The Associate of Arts (A.A.) or the Associate of Science (A.S.) degree is usually earned at a community or junior college upon completion of 2 years of study. In many instances, it represents the same level of educational achievement as completion of the first 2 years of a 4-year college or university, and large numbers of students who have earned the Associate's degree transfer to 4-year institutions. Other students, especially those who have completed programs of job-related training, normally enter the work force as mid-level technicians upon graduation.

The Bachelor's Degree

The bachelor's degree normally requires 4 years of academic study beyond the high school diploma. In recent years, accelerated learning plans, credit by examination or practical work experience, year-round study plans, and other innovations have enabled some students to complete the program in less than 4 years.

The two most common bachelor's degrees are the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.). The former may require more general education courses in the arts and humanities whereas the latter usually places greater emphasis on the sciences. Other common bachelor's degrees include the B. Ed. (education), the B.F.A. (fine arts), the B. Mus. (music), and the B.B.A. (business administration). The B. Arch. (architecture) is often a 5-year program. The B.D. (divinity) and the LL.B. (law) are professional degrees usually of 3 years that in most institutions require a candidate to have earned first a B.A. or a B.S.

The Master's Degree

Master's degree programs vary considerably among the approximately 900 institutions that award them. The number of fields in which master's degrees are conferred is very large, but most are called Master of Arts (M.A.) or Master of Science (M.S.) degrees or are professional degrees such as Master of Nursing (M. Nurs.) or Master of Social Work (M.S.W.). Programs leading to the degree usually require 1 to 2 years of advanced study in graduate-level courses and seminars. Frequently a thesis is

required and/or a final oral or written examination. Requirements may differ not only among institutions but among disciplines within an institution as well.

The Doctor's Degree

The doctor's degree, usually the Doctor of Philosophy (Ph. D.), is normally considered the highest degree conferred in the United States. It attests to the ability of its holder to do original research of a high order. Since work at the doctoral level is highly individualized, the specific requirements may vary widely. In general, however, the degree requires a minimum of 2 years of course work beyond the master's degree level, success in a qualifying examination, proficiency in one or two foreign languages and/or in an equivalent research tool (such as statistics) that may be considered appropriate to a particular field of specialization, and completion of a doctoral dissertation.

During 1976, an estimated 35,000 doctor's degrees were conferred in the United States.[5]

NOTES

[1] Considerable use was made in this section of: *Education in the United States,* Beatrice C. Lee, ed. Washington, D.C.: National Education Association, 1976. This publication provides a useful and concise overview of the structure and organization of education.

[2] Data provided by the National Center for Education Statistics.

[3] *The Condition of Education, 1977.* National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office, 1977. p. 180.

[4] For more details on this and the following paragraphs see: Clifford F. Sjogren. *Diversity, and Quality: A Brief Introduction to American Education for non-Americans.* New York: College Entrance Examination Board, 1976.

[5] *The Condition of Education, 1977.* loc. cit. p. 187.

4. CURRICULUM

Responsibility for determining and developing school curricula lies with State and local education authorities. There is no national curriculum on any level of education. The Federal Government is not without influence, however, in encouraging curriculum development in particular fields of study. For example, in 1958 the Congress passed legislation to stimulate individuals to study science, mathematics, and foreign languages through Federal funding of fellowships for graduate study in those areas, inservice training institutes, and other provisions. Similarly, in 1967 the Congress enacted the Education Professions Development Act, which was directed toward meeting shortages of adequately trained teachers by providing funds to train and retrain teachers for what was then discerned as a national need. Among the more recent examples of Federal initiatives in stimulating students to enter fields recognized as critical to the Nation's current or long-term needs are the personnel development provisions of the Education for All Handicapped Children Act (1975) and the Bilingual Education Act (1974), as well as the Domestic Mining and Mineral and Mineral Fuel Conservation Fellowship Program of the Higher Education Act (1965), as amended.

The States exercise considerable control over school and university curricula. Through their licensing authority, for example, individual States can require that professionals (such as teachers, medical personnel, attorneys, and engineers) as well as skilled craftsmen (such as electricians and plumbers) complete a minimum number of courses in a specified list of academic or professional subjects to qualify for a license to practice their respective professions.

Likewise, each State is authorized to determine the requirements for conferral of the high school diploma within its borders. Most States require not only a minimum number of courses, but also certain specific courses in English, mathematics, science, social studies, and physical education. Although some States specify, for example, that one or more social studies courses be in American history or the history of the particular State, most State legislatures do not enter into the specifics of curriculum design. The degree of prescription by State Boards of Education varies. Local school districts may add curricular requirements or restrictions of their own, such as history or sex education.

Elementary school textbooks and other curricular materials are selected by local autnorities in 27 States and by State officials in 23. Secondary school materials are selected on the local district level in 32 States and on the State level in 18. Whether the selection occurs on the State or local level, it is usually the responsibility of a textbook commission made up of professional educators and community representatives. Such a commission is usually authorized by the State or local school board to act in its name. Most commonly, textbook commissions approve use of a number of texts for each course, and a selection from the list is then made on the local school level. A considerable amount of curriculum development is done by private publishing firms that hire university consultants and other educators to prepare teaching materials which they then submit to the local and State textbook commissions for approval. In many instances, however, teams of

teachers and curriculum experts on the local level develop their own curriculums in a wide variety of fields. Teachers may usually choose a program of studies from these materials or from the variety of commercially or university-prepared courses of study that have been approved for use by local school authorities.

It is interesting to note that since the early 1940's, no State with a system of local textbook selection has changed to one of State selection. Also, several States with the selection process on the State level have modified their systems to increase the participation of local school authorities in the adoption of curricular materials.

Various college and university entrance requirements and national achievement and aptitude tests by private organizations exert an indirect but considerable influence on curriculum decisions on the secondary school level. Local school authorities are understandably concerned that graduates of their schools be readily admitted to higher education institutions and perform well on examinations for which there are national norms. Thus, a certain pragmatic curricular unity emerges throughout the Nation despite the decentralized nature of American schools.

On the college and university levels, curriculum decisions are made most often within academic departments, and individual professors are responsible for the content of their courses. The university usually requires, however, that a student successfully complete a given number of credits and, to some extent, a specified sequence of courses in a major and a minor field of study as well as a number of elective courses before a degree is conferred.

5. TEACHER EDUCATION

PRESERVICE

Teacher education in the United States is offered exclusively on the higher education level. Most large universities, both public and private, have departments or colleges of education as do those institutions that during the past few decades have been reorganized from State normal schools into State colleges. Many liberal arts colleges have teacher education programs, and there are a few specialized schools for preparing teachers of music or art or teachers of severely handicapped children. In all, there were 1,367 institutions that offered programs of teacher education at the beginning of academic year 1976-77.[1]

Candidates for teacher education programs must have completed secondary school and earned admission to a college or university. In addition they must, in most cases, complete 1 or 2 years of general undergraduate study. They are then accepted into teacher education programs on the basis of their college academic record, personal interviews, secondary school grades, and standardized test scores. Preliminary data reported by the National Survey of the Preservice Preparation of Teachers suggest that students who are admitted to teacher education compare academically very favorably to other students.[2]

The minimum requirement for teaching on the preschool, elementary, or secondary level in any of the 50 States is now the bachelor's degree, a diploma conferred after 4 years of study on the higher education level. Fourteen States require that teachers hold a master's degree or are prepared to earn one within a given number of years. Teachers are encouraged to pursue further study in many other States through salary increments, free tuition, and other incentives. In this regard, it is interesting to note that the ratio of master's degrees to bachelor's degrees granted by the Nation's schools, colleges, and education departments has increased from 1 to 5 in 1972-73 to almost 1 to 2 in 1976-77.[3]

All States require that the program of studies followed by future teachers include a balance of academic and professional education courses. Recent survey data show that throughout the country teacher preparation programs are built on a basic foundation of general liberal arts education--in which the humanities, natural sciences, and social sciences are included in roughly equal proportions. To this general education foundation are added pedagogical studies including both academic courses and supervised teaching experience. Most States now require that their future teachers "student-teach" for a full semester under the supervision of an experienced teacher approved by the teacher education programs in which the students are enrolled.

Another important development has been the growth of Competency-Based Teacher Education (CBTE). Fundamentally, this is an approach in which persons responsible for teacher education programs adopt a

written statement of learning objectives or competencies to be attained by their students. About half of the Nation's teacher education programs have adopted some form of CBTE.

Significant changes have occurred also in the use of some techniques in teacher education programs. Comparative data obtained from national surveys of such programs in 1968, 1973, and 1976 suggest that some costly innovations such as microteaching and simulation have decreased in use after an apparent initial surge in popularity. The data also indicate that interaction analysis, questioning strategies, and Bloom's taxonomy have moved from experimental status to widespread use. The latter three approaches are characterized by low cost, ease of transfer from one type of classroom to another, and absence of expensive equipment.[4]

INSERVICE

There is hardly a school district in the country that does not encourage or assist its elementary and secondary teachers in one way or another to continue their professional growth. The opportunities for formal professional development that are most frequently available to teachers are courses and workshops. Those that attract the most participants tend to be those that focus on problems that affect large numbers of teachers, such as instructing exceptional children in regular classes, meeting the needs of children from low-income families, and providing bilingual and multicultural education.

It is not always a higher education institution that provides these programs. Many large school districts and several smaller ones sponsor workshops utilizing their own staff, with or without outside consultants. Many districts have established inservice training centers, which often include a reference library, an audiovisual center, workrooms for developing instructional materials, and rooms for seminars or lectures. With increasing frequency, control of such teacher centers is being entrusted to the teachers themselves.

Inservice opportunities, whatever their source, are not limited to workshops and lectures. They include visits to other schools, availability of consultants for individual problems, and certain days (often called "inservice days") on which pupils are dismissed from school and teachers participate in special programs of enrichment.

Many school districts encourage their teachers to participate in inservice education in a variety of ways. They may (1) require a prescribed number of courses before a teaching contract can be renewed, (2) subsidize tuition fees at the university, (3) increase the salary of teachers who earn higher degrees, complete a given number of credit hours, or participate in other approved inservice educational activities, or (4) release teachers from classroom responsibilities and provide travel expenses to enable them to attend professional gatherings.

Three emerging trends of particular significance for inservice education should be noted. The first is the movement in American so-

ciety toward lifelong learning. The second is more widespread recognition that teachers are professionals and that the teaching profession should have more responsibility for improving the performance of its members. The third trend is the reduction in personnel turnover, which increases the responsibility of inservice training for helping ensure a sufficient flow of new ideas, methods, and techniques into the schools. This trend is caused primarily by the decline in school enrollments at the elementary and secondary levels, which has reduced employment possibilities for new teachers, and the improvement in salary schedules and conditions of employment, which has encouraged teachers in service to remain in the teaching profession.

NOTES

[1] Data supplied by the National Council for Accreditation of Teacher Education.

[2] *Condition of Teacher Education, 1977.* Draft Summary Report, March 1977. Lewin and Associates, Inc., Washington, D.C. March 1977.

[3] Ibid., p. 40.

[4] Ibid., pp. 77-80.

Part II:
Development of Education During 1974 to 1976

1. EDUCATIONAL POLICY AND LEGISLATION [1]

The primary responsibility of the Federal Government in the field of education continues to be, essentially, to help ensure equality of opportunity for all students throughout the American educational system. As a result of the cumulative effect of combined State and Federal efforts over the past several years, it can now be stated categorically that every public school system in the United States must be prepared to offer every student resident in its jurisdiction 12 years of effective schooling. The key words are every and effective. All children must not only be allowed to go to school; they must also receive the kind of help they need to make progress.

In this decade, the rights of handicapped children to the kind of help they need have now been adjudicated in the courts and established through legislation. So have the rights of children whose home language is other than English. The rights of these two classes of children are not the last that will receive judicial or legislative attention, but the trend seems clear: if the schools are failing to serve a class of students, they will be required to serve it.

The question of what will be considered the adequate result of 12 years of schooling has not yet been satisfactorily answered. Long the exclusive province of the States, the issue may become a factor in the growing Federal responsibility for protection of the rights of minorities in education.

The Education Division of DHEW, under the various authorities provided it by the Congress, has been instrumental in developing understanding of the needs of minorities in education and the methods and mechanisms by which our school systems can meet these needs. In general the mode of Federal involvement has been to support research, to support and evaluate projects exploring and demonstrating education methods, to make the education community aware of the needs of special groups and the possibilities for meeting these needs, and then to support all or part of the additional costs incurred by school systems implementing approved programs up to the limit of funds available. It is a cooperative process based on the mutual desire of State, local, and Federal authorities to improve education. The evolution of programs for education of the handicapped is the outstanding example of this type of development. Bilingual education is another.

Sometimes the process is reversed, as in the case of title I of the Elementary and Secondary Education Act. In that instance, substantial funds for education of the disadvantaged became available before their special needs had been defined and educational programs developed. The result was that several thousand school districts almost simultaneously showed a new and active interest in the children of the poor--perhaps the most efficacious development in education in our time. The proven methods of compensatory education are just now becoming generally recognized and accepted. Once again the process was cooperative.

In the education era we appear to be entering, the luxury of choice of which inequities to address and which to defer is rapidly disappearing. School systems' priorities are being set by the courts and by the political process. The educational system will not be free, either, to limit compensatory and special programs only to those students public authorities think we can afford to help. The emerging philosophy is that when methods are developed to reduce the inequity suffered by a class of students, the obligation is established to serve all members of that class. If resources to meet the obligation are lacking, ways must be found to create the resources too.

Policy goals take on concrete form at the national or State level through legislation passed by the Congress or State legislatures and signed into law by the President or State Governors. The major portion of Federal legislation for elementary and secondary education and for higher education comes up for periodic reauthorization. During the period 1974-1976, a considerable amount of Federal education legislation has been enacted.[2] Because of their broad and far-reaching policy implications, three of these laws are of particular importance: the Education Amendments of 1974 (Public Law 93-380), the Education Amendments of 1976 (Public Law 94-482), and the Education for All Handicapped Children Act (Public Law 94-192). A brief examination of some of the provisions of these acts will provide useful insights into a number of significant policy issues in contemporary American education.

EDUCATION AMENDMENTS OF 1974[3]

The Education Amendments of 1974 (Public Law 93-380) is an omnibus or umbrella act written to affect to one degree or another virtually every aspect of education in the United States. It extended through Fiscal Year 1978 the Elementary and Secondary Education Act,[4] the Impact Aid Laws, and the Indian Education Act. It extended the Education of the Handicapped Act through Fiscal Year 1977 and the Emergency School Aid Act through Fiscal Year 1976. While its primary focus is on the extension and amendment of existing elementary and secondary school programs administered by the U.S. Office of Education, it also created several new programs and called for a number of significant reforms and innovations. Among the most important of these are the following:

> Equity of funding: The new formula of apportionment of funds from Elementary and Secondary Education Act, Title I (Financial Assistance to Local Educational Agencies for the Education of Children of Low-Income Families) recognized to a greater extent than before the national scope of educational needs and provided that no State per-pupil-expenditure factor --in terms of Federal apportionment of funds given to States-- can be less than 80 percent of the national average nor greater than 120 percent. This formula thus provides a minimum Federal apportionment for poorer States.

Accountability: In keeping with new trends toward accountability, the Commissioner of Education was authorized to use up to .5 percent of Title I appropriations to conduct program evaluations. The intent of the Congress is to assure that the programs do have favorable impact. In addition, advisory councils selected by parents are now required for each school as well as for each school district. (Previously they were required only for school districts.)

Bilingual education: In keeping with a recent judicial decision (the Lau decision) in California that stated that instruction must be provided to non-English-speaking students in a language they understand, the new legislation places heavy emphasis on teacher training in bilingual education. The Director of the National Institute of Education is encouraged to carry out research, development, and dissemination of materials in the bilingual area as well as to provide a national assessment of the need for bilingual education.

Concern with basic skills: The Congress and the Administration have placed priority emphasis on reading and other fundamental skills. The Amendments create a National Reading Improvement Program that is to receive direct Federal support.

Lifelong learning and use of community resources: Emphasis in the legislation on adult education and community schools underscores the fact that learning is a lifelong process in which all community resources should be used. The Commissioner is authorized to make grants to State and local education agencies to share the cost of operating community education programs, and to higher education institutions to train personnel in this field.

Gifted and talented children: Under this legislation, the Commissioner of Education is authorized to make grants to State and local education agencies for planning, developing, operating, and improving programs designed to meet the needs of gifted and talented children at the preschool through secondary levels.

Equity for women: New emphasis on research, demonstration, and career planning for women represents a major commitment at the Federal level that is expected to bring change in this area. The Commissioner is authorized to support research, curriculum development, training, and guidance and counseling designed to assure educational equity.

Training for teachers in specialized fields: The new legislation authorizes funds for training teachers in reading skills, bilingual education, Indian education, counseling for women's careers, metric education, and consumer education.

EDUCATION AMENDMENTS OF 1976[5]

The Education Amendments of 1976 (Public Law 94-482) extended and revised a number of existing Federal programs in higher education and vocational education. They also authorized Federal education officials to explore the concept of lifelong learning and the possibility of implementing programs in this area.

Most Federal programs in higher education are now embodied in the Higher Education Act of 1965 as amended through the years. The Education Amendments of 1976 extended most of the provisions of this act through September 30, 1979. The Guaranteed Student Loan Program, however, was extended through Fiscal Year 1981, and the College Work-Study and the Cooperative Education Programs through Fiscal Year 1982.

Vocational education programs have received Federal support since enactment of the Smith-Hughes Act in 1917. Other significant vocational education legislation was passed in 1963 and 1968. The Education Amendments of 1976 extended existing funded programs through Fiscal Year 1977 and provided for introduction of new programs of vocational education at the beginning of Fiscal Year 1978.

The Amendments of 1976 made significant changes in the areas of lifelong learning, student financial aid, educational research and development, and vocational education.

Lifelong Learning

The law treats the concept of lifelong learning and the activities it might involve in the broadest sense. For example, the following addition was made to the Higher Education Act of 1965 (as section 132):

> Lifelong learning includes, but is not limited to adult basic education, continuing education, independent study, agricultural education, business education and labor education, occupation education and job training programs, parent education, postsecondary education, pre-retirement and education for older and retired people, remedial education, special educational programs for groups or for individuals with special needs, and also educational activities designed to upgrade occupational and professional skills, to assist business, public agencies, and other organizations in the use of innovation and research results, and to serve family needs and personal development.

Furthermore, because the concept reaches into every educational level--public, private, formal, and informal--authority to implement this part of the law has been given to the Assistant Secretary for Education. Under this authority, grants may be made to appropriate State agencies, colleges and universities, and public and private nonprofit organizations to implement programs of lifelong learning. Beginning January 1, 1978, the Assistant Secretary must report annually on the results of these activities to the President and the Congress.

Student Financial Aid

The Education Amendments of 1976 further increase the maximum Basic Educational Opportunity Grant (BEOG) to students in postsecondary institutions from $1,400 for Fiscal Year 1977 to $1,800 per year for Fiscal Years 1978 and 1979. It adds a new section providing that after July 1, 1977, students attending nonprofit higher education institutions will be eligible for State Student Incentive Grants. In keeping with the Federal orientation toward increasing equality of educational opportunity, the new legislation authorizes a program under which the Federal Government helps support the organizing of State educational information centers to encourage rurally isolated and disadvantaged youth to further their education.

Educational Research and Development

Other recent policy developments involve attempts to get better coordination of Federal efforts in education. The Education Amendments of 1976 provide that a Federal Council on Educational Research and Development be established composed of representatives of various Federal executive agencies engaged in educational research. The Director of the National Institute of Education is to be the Council's chairman. In addition to a coordinating and consulting role, the Council is required to make annual reports to the President and the Congress on the status of educational research and development (R&D) in the United States. It is also to recommend effective means for disseminating information relating to educational R&D. In recent years, the scope of educational research and development has been expanded to include not only research and development, but also dissemination and evaluation. (See chapter 3 for more information on the Council.)

Vocational Education

The Educational Amendments of 1976 modified the Vocational Education Act of 1968. The law now places heavy emphasis on establishing new vocational education programs rather than on maintaining existing ones. In fact, the conferees made it clear that only when localities find it difficult to maintain ongoing programs should Federal funds be used. Otherwise, Federal funds are intended primarily for catalytic purposes.

Elimination of sex bias also received close attention under the new law. Each State must assign full-time personnel to this problem area and reserve $50,000 from a given year's basic allocation for use in eliminating sex bias.

Finally, while both national and State advisory councils were retained under the new law, each State advisory council was expanded from 9 membership categories to 20, and its role was strengthened. The council must give technical assistance to the new local advisory councils, which are composed from the general public--especially representatives from business, industry, and labor.

EDUCATION FOR ALL HANDICAPPED CHILDREN ACT[6]

The Education for All Handicapped Children Act (Public Law 94-142) of November 1975 validated the proposition that the claim of a handicapped individual to first-rate schooling (and by extension to all other privileges offered by our society) is no less compelling than that of any other American.

This act opened the way for U.S. schools to broaden their horizons, no longer focusing their operations solely on "regular" students but giving equal consideration to those with handicaps--including placing such youngsters in regular classrooms when doing so would be in their best interest. It is intended to make certain that without exception every one of the Nation's handicapped children (defined as "mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, or other health impaired children, or children with specific learning disabilities") will receive "special education and related services."

The Education for All Handicapped Children Act is remarkable among Federal education laws for being permanent, voted by margins of 404 to 7 in the House of Representatives and 87 to 7 in the Senate to serve the Nation's schools on a permanent basis.

Moreover, many of the advances it called for have specific implications for the education of nonhandicapped youngsters as well. Two are especially noteworthy. The first advance, reflecting a practice that enlightened educators have been advocating for many years, is that children served by the Act will be educated in accordance with individual plans tailored to their particular needs and capacities. The second is that by stimulating States to provide free public education to all handicapped children starting at age 3, attention is drawn to preschool education as an integral part of elementary education.

To receive any funds under the Act, States must implement policies which include the following:

- A free public education is to be made available to all handicapped children between the ages of 3 and 18 by September 1978 and for those between 3 and 21 by September 1980. Coverage of children in the 3 to 5 and 18 to 21 ranges is not to be required in States where school attendance laws do not include those age brackets. Nevertheless, it is now national policy to begin the education of handicapped children by at least age 3, and, to encourage this practice, the new law authorizes incentive grants of $300 over the regular allocation for each handicapped child between the ages of 3 and 5 who is afforded special education and related services.

- For each handicapped child there is to be an "individualized educational program"--a written statement developed jointly by a qualified school official, the child's teacher and parents or guardian, and if possible the child himself. This written statement is to include an

analysis of the child's present achievement level, a list of both short-range and annual goals, an identification of specific services that are to be provided toward meeting those goals, an indication of the extent to which the child will be able to participate in regular school programs, a notation of when these services are to be provided and how long they are to last, and a schedule for checking on the progress being achieved under the plan and for making any revisions in it that may be needed.

- Handicapped and nonhandicapped children are to be educated together to the maximum extent appropriate, and the former are to be placed in special classes or separate schools "only when the nature or severity of the handicap is such that education in regular classes," even if they are provided supplementary aids and services, "cannot be achieved satisfactorily."

- Tests and other evaluation materials used in placing handicapped children are to be prepared and administered in such a way as not to be racially or culturally discriminatory, and they are to be presented in the child's native tongue.

- There is to be an intensive and continuing effort to locate and identify youngsters who have handicaps, to evaluate their educational needs, and to determine whether those needs are being met.

- In the overall effort to make sure education is available to all handicapped children, priority is to be given first to those who are not receiving an education at all and second to the most severely handicapped within each disability who are receiving an inadequate education.

- In school placement procedures and in fact in any decisions concerning a handicapped child's schooling, there is to be prior consultation with the child's parents or guardian, and in general no policies, programs, or procedures affecting the education of handicapped children covered by the law are to be adopted without a public notice.

- The rights and guarantees called for in the law are to apply to handicapped children in private as well as public schools, and youngsters in private schools are to be provided special education at no cost to their parents if the children were placed in these schools or referred to them by State or local education agency officials.

- The States and localities are to undertake comprehensive personnel development programs, including inservice training for regular as well as special education teachers and support personnel, and procedures are to be launched for acquiring and disseminating information about promising educational practices and materials coming out of research and development efforts.

- In implementing the law, special effort is to be made to employ qualified handicapped persons.

- The principles set forth a few years ago in Federal legislation aimed at eliminating architectural barriers to the physically handicapped are to be applied to school construction and modification, with the Commissioner authorized to make grants for these purposes.

- The State education agency is to have jurisdiction over all education programs for handicapped children offered within a given State, including those administered by a noneducation agency (e.g., a State hospital or the welfare department).

- An advisory panel is to be appointed by each Governor to advise the State's education agency of unmet needs, comment publicly on such matters as proposed rules and regulations, and help the State develop and report relevant data. Membership on these panels is to include handicapped individuals and parents and guardians of handicapped children.

SIGNIFICANT DEVELOPMENTS ON THE STATE LEVEL[7]

The responsibility for providing education is given by the Constitution of each State to the State legislature, which is the prime policymaking body in each State. However, in a number of States, the Chief State School Officer, (particularly in those States in which he or she is elected on a statewide ballot) may publish policy statements that then have the effect of law. In still other States, the State Board of Education has this power. This is particularly true in States where control is more centralized. In other States, however, where constitutional restrictions on State power make local control more important, local school districts frequently have more power than State Boards or Chief State School Officers. Local school district board members are legally considered State officers. In all States still another factor is entering the scene--the State Supreme Court and the entire State court system. While these entities do not initiate policy, they do issue decisions that interpret or clarify policy statements.

Despite the wide variety of policymaking bodies, there have been several definite important national trends that have become evident in all or most States.

State School Finance Systems

Spurred on by a series of State Supreme Court decisions, 10 States passed extensive school finance reform laws in 1973 and 5 more followed suit in 1974. The purpose of these laws was essentially to guarantee equal fiscal resources for school districts that presently vary widely in their ability to pay for education. In one State, Wisconsin, the new school finance reform law was declared unconstitutional by that State's Supreme Court. The specific part of the law found unconstitutional would have allowed the State to collect money from wealthy school districts and then redistribute it to poorer school districts. In 1976, California and Washington courts found that the presently operating school finance program was unconstitutional and these States are now attempting to conform to the courts' decisions.

Those States that did pass school finance reform laws are now contemplating different ways of measuring the wealth of school districts. Traditionally, it is measured in terms of assessed property per pupil. States are now studying the feasibility of measuring wealth in terms of assessed property evaluation per capita. Since this method still puts the emphasis on the value of local property, a number of States are investigating the feasibility of using income rather than property value as a method of measuring school district wealth. Today, the State income tax in addition to the State sales tax is becoming a revenue source for local governments, including school districts. For example, income taxes are used directly or indirectly for school purposes for all school districts in Maryland, Kansas, and Iowa. In these States, school districts wishing to spend above the foundation amount may levy income taxes to raise the additional funds. In Louisiana, school districts can levy up to a 1 percent sales tax. Many school districts that are components of other government levels that levy income taxes, for example cities (such as New York City), are partially supported by such taxes.

Declining Enrollments

Because State aid to local school districts is usually tied to the number of students enrolled, the new phenomenon of declining enrollments has caused many States to study alternative ways of financing local school districts. Because of the relative lag in responding to the decline, many school districts are having financial difficulties. Between 1970 and 1975, enrollments declined in 39 of the 50 States. The most severe decline was in Kansas, which experienced a 12.9 percent decrease.

States are experimenting with a variety of methods of reducing the shocks of financial loss to local school districts under the established enrollment-based formula. The simplest approach to easing the transition has been to count only half of the pupil decline for State aid purposes for a year or two. The other method now used in Colorado, North Dakota, and Ohio and proposed in a number of other States is to use whichever is greater--the current year enrollment or the average of the enrollment of the preceding 2 or 3 years. This method provides a longer term cushion and is probably more reflective of the time period needed by school districts to cut back on school resources as enrollments drop. Since decreases in enrollments are projected to occur into the 1980's, there can be no doubt that this problem will be the subject of a number of legislative declarations of State policy.

Minimal Competency

Extremely important policy decisions are taking place in the States that may affect the teacher role and the very purpose of schools in the States. As many adults read daily about lower test scores and rising education costs and then look at their own child's performance or the ability of the high school graduate they just hired at work, both the problem and the recommended solution have taken on some sense of personal urgency. There is a growing demand that schools measure more systematically the accomplishment of children, that children achieve a prespecified level of competency in the subject matter at one grade level

before being moved on to the next grade level, and that they be able to pass a test in basic skills before receiving a high school diploma.

Several States have responded to growing parental concern by introducing the idea of minimal competency testing either through legislative action or State Board action. By the end of 1976 more than 16 States had taken either legislative or State Board action to assure that some form of minimal competency testing or educational standards were initiated in the public schools.

Here again there is a wide variety of approaches. Enacted legislation and adopted State Board rulings show that rarely have two States taken identical action. If they show any trend, it is that many States recognized a similar problem at about the same time and then each proceeded to take action in its own way. States that usually opt for a strong centralized approach to any issue have enacted rather prescriptive standards for local districts to meet; whereas States that usually put more emphasis on local control have tended to pass legislation giving guidelines and responsibility to local boards of education. The movement towards minimal competency standards has progressed about as rapidly as any trend in education in the memory of many educational observers. It may turn out to be the most significant trend in education for a number of years.

Lifelong Learning

Another discernible trend of great potential importance that is just beginning to emerge both in operational policy of institutions and in statutory policy is the growth of lifelong learning. It is evident that many people no longer perceive schooling to be confined to a period of time during the younger years. Many higher education institutions are either decreasing or waiving entirely tuition for senior citizens and a number of States have introduced and passed legislation requiring tuition-free classes for senior citizens.

Legislation for Handicapped Students

Stimulated by a series of court cases and the passage of the 1975 Education for All Handicapped Children Act (Public Law 94-142), a great many States are initiating legislation dealing with the education of the handicapped. Although many States under mandate of State courts have made rapid progress in the last 3 years in this area, a Congressional action that mandated equal educational opportunity for handicapped persons is causing many States to enact legislation policymaking in this area in order to qualify for the Federal monies that will eventually start to flow to support this program.

NOTES

[1] Adapted from: U.S. Department of Health, Education, and Welfare. *Annual Report of the Commissioner of Education, Fiscal Year 1975.* Washington, D.C.: Government Printing Office, 1976, pp. 1-3.

[2] See appendix A for a list of recent educational legislation.

[3] Albert L. Alford. "The Education Amendments of 1974," *American Education.* Vol. XI, no. 1, January-February 1975.

[4] In the United States, the governmental fiscal year begins October 1. Thus, Fiscal Year 1980 begins on Oct. 1, 1979.

[5] Albert L. Alford. "The Educational Amendments of 1976," *American Education.* Vol. XIII, no. 1, January-February 1977.

[6] Adapted from: Leroy V. Goodman. "A Bill of Rights for the Handicpped," *American Education.* Vol. XII, no. 6, July 1976.

[7] Prepared by Russell B. Vlaanderen, Director, Research and Information, Education Commission of the States, Denver, Colo.

2. STATISTICS ON EDUCATION

AN OVERVIEW

Education was the primary occupation of 63.6 million Americans in fall 1975. Included in this total were almost 60.2 million students, nearly 3.2 million teachers, and about 300,000 superintendents, principals, supervisors, and other instructional staff members. This means that, in a nation of 214 million people, nearly 3 out of every 10 persons were directly involved in the educational process. It is not surprising, therefore, that so much public attention is focused on schools and colleges and that a substantial portion of national resources is being allocated to this vital enterprise. Increased support for education in recent years has come from Federal, State, and local governments, as well as from a variety of private sources. Total expenditures of educational institutions amounted to approximately $120 billion during the school year 1975-76. The material that follows presents more detailed information on the status and progress of education in the United States.

ENROLLMENT

Total enrollment in regular educational programs from kindergarten through graduate school increased for 27 consecutive years, reaching 59.8 million in fall 1971. Subsequently, although there were small annual decreases at the elementary school (grades 1-8) level, high school (grades 9-12) and college enrollments continued to rise, so that in fall 1975 total enrollment reached an all-time high of 60.2 million students.

Further increases are not anticipated at all levels of education in the immediate future. Reflecting the fact that there will be fewer children 5 to 13 years of age than in the recent past, elementary school enrollment began to drop in fall 1970 and is expected to decrease for the next several years. High school enrollment also is expected to show small annual reductions for a number of years after reaching a high of 15.8 million in fall 1976. Enrollment in colleges and universities, however, is likely to continue to increase through the early 1980's.

Between fall 1974 and fall 1975, enrollment in kindergarten through grade 8 decreased from 35.0 to 34.6 million, or slightly more than 1 percent; enrollment in grades 9 through 12 increased from 15.6 to 15.8 million, or about 1 percent; and degree-credit enrollment in higher education institutions rose from 9.0 to 9.7 million, or nearly 8 percent. Additional information on enrollment by level for public and nonpublic schools may be found in table 1.

Since the end of World War II a dominant trend in this country has been for more persons to enter the educational system at an earlier age and to remain in school for a longer period of time than their predecessors. This trend is illustrated most dramatically by a comparison of the latest available data on the percentage of 5-year-olds enrolled in school with the comparable percentages one and two decades earlier (table 2). More than 87 percent of the 5-year-olds were enrolled in school in fall 1975 as compared with 70 percent in 1965 and 58 percent in 1955. Enrollment percentages for persons in their middle and late teens, while down slightly from the peaks they attained around 1968, were substantially higher in 1975 than in 1955 and somewhat higher than they were in 1965.

Table 3 provides evidence of the long-term growth of high school education (grades 9-12) in the United States. From 1890 to 1975, while the population 14 to 17 years of age little more than tripled, enrollment in grades 9 through 12 increased 44 times, from 360,000 to 15.8 million. In 1890, only about 1 person in 15 in the 14 to 17 age group was enrolled in school; in 1975, the figure was more than 9 out of 10.

Over the past two decades college enrollment in this country has nearly quadrupled. Part of the increase may be accounted for by the fact that there are more young people of college age. Table 4 indicates, however, that there is another important factor that has contributed to increased college attendance. The proportion of young people attending college has risen from about one-seventh in the early 1950's to more than one-third today.

For more than half a century the Federal Government has assisted State and local governments in providing vocational education programs. In recent years, a variety of new programs have been added to the traditional classes in agriculture, home economics, and trades and industry, and the number of participants has increased at a rapid rate. Approximately 15.5 million students were enrolled in federally aided vocational classes in 1975 (table 5).

TEACHERS AND INSTRUCTIONAL STAFF

The teaching staff in American schools and colleges grew rapidly during the 1960's, keeping pace with and frequently exceeding the rise in enrollments. The growth rate has been more modest for the past several years. Between fall 1974 and 1975, the number of elementary school teachers increased by about 1 percent and the secondary school teachers by 2 percent. The increase at the college level is estimated at nearly 8 percent (table 6).

The long-range trend is for the number of public elementary and secondary school teachers to grow at a somewhat faster rate than school enrollment. Consequently, there has been a slight decline in the past

few years in the number of pupils per teacher. As table 7 indicates there were 20.4 pupils per teacher in public schools in 1975 as compared with 22.3 pupils for each teacher 5 years earlier.

SCHOOLS AND SCHOOL DISTRICTS

There were approximately 16,400 local school districts in the United States in fall 1975. This new low was achieved by the elimination of more than 1,600 school districts over a 5-year period (table 7). The number of school districts is gradually being reduced through a process of reorganization and consolidation at local or State initiative.

The number of public elementary schools is also declining over time. This trend reflects school consolidations and, in many instances, the closing of small rural schools. In 1974-75 the public school system included 61,800 elementary schools, 23,800 secondary schools, and 1,900 combined elementary-secondary schools (organized and administered as a single unit).

HIGH SCHOOL AND COLLEGE GRADUATES

More than 3.1 million persons graduated from secondary school (completed grade 12) in 1975, and 1.3 million received earned degrees from American colleges and universities. Included in the degrees conferred were 979,000 bachelor's and first professional degrees, 292,000 master's degrees, and 34,000 doctorates. Over the past 15 years, the annual number of high school graduates has increased by two-thirds, the number of bachelor's and first-professional degrees has risen by two and one-half times, and the number of advanced degrees has nearly quadrupled (tables 8 and 9). These high growth rates reflect the rise in the number of young people of high school and college age and also a substantial increase in the proportion completing each level of education.

Data on earned degrees conferred by major field of study in the year ending in June 1975 are shown in table 10. At the bachelor's level more degrees were conferred in education, social sciences, and business and management than in any other field. The traditional fields of law, health professions, and theology were the leaders at the first-professional level. The leading fields in terms of the number of master's degrees conferred were education, business and management, and social sciences. More than 3,000 doctor's degrees were conferred in each of five fields: education, social sciences, physical sciences, biological sciences, and engineering.

SCHOOL RETENTION RATES AND EDUCATIONAL ATTAINMENT

Table 11 shows the increase in school retention rates from the fifth grade through college entrance since the early 1930's. During this period, the proportion of fifth graders who went on to graduate

from secondary school increased from about 30 to nearly 75 percent. In other words, the rate of graduation for this group is now about two and one-half times that which prevailed in 1932. The increase in college attendance is even more striking: approximately 45 percent of our young people now enter college, compared with 12 percent in 1932.

Since 1940 the U.S. Bureau of the Census has collected statistics on the educational attainment of the population in this country. Table 12, which is derived from Census publications, compares the educational attainment of the population 25 to 29 years of age with that of the total population 25 years of age and over. The former group in March 1976 had completed one-half year of school more than the total adult population. Nearly 85 percent of the 25 to 29 age group reported that they had completed the equivalent of secondary school education, as compared with 64 percent of all adults. Almost 24 percent of the young adults identified themselves as college graduates, while fewer than 15 percent of all adults had completed 4 or more years of college.

Only one percent of the persons 14 years of age and over were illiterate in 1969 (table 13). This illiteracy rate may be compared with that of 2.2 percent in 1959, 4.3 percent in 1930, and 10.7 percent in 1900. Thus the 20th century has seen a steady reduction in the percentage of persons in the United States who are unable to read and write.

INCOME

Public elementary and secondary schools in the United States derive virtually all their revenue from various governmental sources. Income from other sources, such as gifts and fees, amounts to less than one-half of one percent of the total revenue receipts. Local governments contribute more than any other source, but in recent years the proportions from the Federal and State Governments have been increasing. In school year 1975-76 an estimated 48 percent of the revenue receipts of public schools came from local sources, 44 percent from State governments, and 8 percent from the Federal Government (table 14). The Federal contribution between 1963-64 and 1975-76 rose from $897 million to about $5.3 billion, or from 4.4 percent to 8.0 percent of the total amounts.

Although State and local governments have primary responsibility for public education in the United States, the Federal Government for many years has maintained an active interest in the educational process. In recent years an increasing amount of Federal support for all levels of education has been provided through a variety of programs administered by a number of Government agencies. It is estimated that Federal grants reached an all-time high of $19.7 billion during the fiscal year that ended June 30, 1976. Table 15 presents a summary of Federal funds for education, training, and related activities for Fiscal Years 1975 and 1976.

EXPENDITURES

Expenditures for public elementary and secondary schools in the United States during school year 1975-76 are estimated at $67.1 billion (table 16). This represented an increase of nearly 18 percent over the $57.0 billion expended 2 years earlier. Per-pupil expenditures have also risen rapidly in recent years. The current expenditure per pupil in average daily attendance in 1975-76 was nearly $1,400, and the total expenditure, including current expenditure, capital outlay, and interest on school debt, approached $1,600 per pupil.

Table 17 compares total expenditures for public and private education at all levels (elementary, secondary, and higher education) with the gross national product over the past half century. Educational expenditures are estimated at $120 billion during school year 1975-76, an amount equal to 7.9 percent of the gross national product. In relation to the gross national product, expenditures today are more than four times as great as they were during the middle 1940's.

Expenditures for vocational education from Federal, State, and local funds are shown in table 18. In 1975 the Federal Government contributed 13 percent of the money, and the remaining 87 percent came from State and local sources. A major goal of American education at the present time is to train young people for useful careers. The increased emphasis on education for a career is reflected in the sevenfold rise in outlays for vocational education over the past decade. In many respects vocational education is the fastest growing segment of the American educational system.

3. EDUCATIONAL RESEARCH AND INFORMATION SERVICES

OVERVIEW

Funding

The Federal Government is the principal supporter of educational research and development (R&D) in the United States. A recent report estimated the total funds obligated in the United States for educational R&D in Fiscal Year 1975 as $576 million. Of this, the Federal Government provided $470 million, State governments $40 million, local governments $4 million, private foundations $57 million, and private industry $5 million.

Within the Federal Government, approximately 25 departments and agencies are involved in educational R&D. Of the $576 million obligated for R&D, the bulk--$376 million--was spent by the Education Division of the Department of Health, Education, and Welfare, which includes the Office of Education ($273 million), the National Institute of Education ($75 million), and the Office of the Assistant Secretary for Education ($16 million).

Of all Federal educational R&D funds, 43 percent are spent on utilization (policy implementation, demonstrations, and dissemination), 40 percent on problem solution (social experimentation, policy formulation demonstrations, and development of materials), and 17 percent on knowledge production (research, evaluation, and statistical activities).[2]

Activities

Various types of institutions are involved in educational R&D, with each type tending to emphasize a different kind of activity. For example, colleges and universities are the largest group engaged in basic research; regional laboratories, R&D centers, and nonprofit institutions are the major groups engaged in development; and local education agencies are the most active in pilot and demonstration activities. Approximately 10,000 professionals are currently working in educational R&D.

The Education Amendments of [illegible]4 listed areas of concern for Federal R&D efforts. They created a Reading Improvement Program and specified that special attention should be given to improving bilingual, handicapped, and adult education programs. The Act also established several "national priorities," including use of the metric system, education of gifted and talented children, community schools, career education, consumer education, women's equity in education, and use of the arts in education. The National Institute of Education (NIE) was mandated to make a 3-year study of compensatory education and a 2-year study of school safety.

The Education Amendments of 1976 included reauthorization legislation for NIE, which not only extended its life for 3 years, but also identified five priority areas for educational R&D: (1) Basic skills, (2) finance, productivity, and management, (3) educational equity, (4) education and work, and (5) dissemination. In addition, the Congress mandated that NIE conduct a study of vocational education programs.

Recent Developments

During the last 2 years, there have been a number of significant developments in educational R&D, particularly in the following areas: Bilingual and bicultural education, experience-based career education, optional types of schools, competency-based education, reading comprehension, and dissemination and utilization of educational R&D.

Bilingual and bicultural education.--A 1974 Supreme Court decision stated that public schools must provide programs to assist children who speak little or no English--an estimated 3.6 million, approximately half of whom are Spanish-speaking. The United States is supporting a broad program of research and development in multicultural/bilingual education. An example of such research is a joint National Institute of Education and National Center for Education Statistics study that will provide a count of children with limited English-speaking skills in the country and will indicate the extent to which their educational needs are presently being met by Federal, State, and local efforts. One outcome of the study will be a new assessment instrument to identify those who may profit from being instructed bilingually. A related study will determine when a child can begin to profit from instruction in English following bilingual instruction. A third study is designed to determine the teaching skills needed to work effectively with limited English-speaking students. Work is also underway to develop a clearinghouse of information in bilingual education.

Experience-based career education.--A recent national concern has been to facilitate the transition from youth to adulthood and from full-time schooling to full-time work. The Experience-Based Career Education (EBCE) program is designed to provide students with the opportunity to use the community as the classroom. This enables students to study systematically and be exposed to the world of work for purposes of learning more about themselves and different adult roles.

In EBCE, each individual community site is analyzed for its potential as a learning resource. Student experiences in the community are carefully planned, supervised, and evaluated. Students learn subject matter normally studied in the classroom, but they learn through the practical application of academic disciplines in the community. Neither students nor community members are paid for their participation in EBCE. Because learning analysts and site coordinators make sure the students are in the workplace to "learn rather than earn," academic credit is awarded for these activities and the student graduates with a regular high school diploma.

As an illustration in one of the approaches to EBCE, a student with a possible interest in law and justice may spend 1 to 4 days a week for 1 to 5 or so weeks investigating the occupations in a police station, another short period of time in a district attorney's office, and perhaps another period of time at the city jail. The specific sites and specific lengths of time (up to 13 weeks in some cases) are directly related to the scope and complexity of the academic project the student has agreed to complete. In all placements, activities are designed to improve academic skills and explore the range of experiences in the worksite. The

students' progress is carefully reviewed at the EBCE Center. Designed for all students, EBCE is now being fieldtested in over 100 communities involving 10,000 students and 10,000 resource sites, and has attracted widespread attention as an operating example of the kind of transitional learning many youth may need.

Optional educational programs.--Because different students learn best in different ways, research does not attempt to show the one "right" way to teach children. In a number of cities, models of a parent-choice system have been developed that both expand the range of alternatives available to students and also allow teachers a degree of freedom and flexibility not commonly found in public schools. For example, the Southeast Alternative Education Program in Minneapolis developed five different model schools in direct response to parent wishes. At the elementary level, parents and children have the choice of a traditional school stressing basic skills, a "continuous progress" school that moves children through a basic curriculum on an individualized basis, an open school with learning activities organized around interest centers, and a free school (k-12) emphasizing creativity and unrestricted curriculum choice. At the secondary level, a high school and the free school offer a similar range of choices.

Competency-based education.--Public demand for educational accountability has been increasing in recent years. Much of this demand has been stimulated by the fact that some high school students are graduating without adequate proficiency in basic skills, that is, reading, writing, and mathematics. Another factor contributing to public interest in this area has been the fact that student scores on several national achievement tests have shown a decline over the past few years.

One response to this public demand for accountability has been the development of competency-based or performance-based education. The purpose of this type of educational program is to identify minimum acceptable levels of performance (or competencies) and to educate the student to achieve these levels. Diplomas are then awarded on the basis of demonstrated competence. The competencies are often divided into two keeping a checkbook and filling out a job application--in short, being able to complete successfully those tasks required in everyday living.

A 1976 survey conducted by the National Center for Education Statistics revealed that 28 States and the District of Columbia are planning or operating performance-based education programs at an elementary and secondary school level. In addition, at least two State college systems require a demonstration of minimum competence in English before a student can move from the first to the second year of college.

This competency-based approach to education, while gaining momentum, is both embryonic and controversial. Some research and development is being done to establish more rigorous approaches to identifying and validating competencies and to refine the means of measuring students' abilities so that the final assessment is reliable. Notwithstanding the fact that empirical data that would give or deny credence to the competency-based movement is not yet available, it appears that competency-based educ could have a significant impact on U.S. education in future years.

Reading comprehension.--Programs continue to be developed with the purpose of discovering how children read and improving their reading abilities. It is generally agreed that the process of learning how to read occurs in two stages: The first is primarily concerned with decoding, the process of learning the correspondence between speech and text; the second focuses on comprehension, the process of understanding and using what is read. Current reading techniques have emphasized the decoding stage, techniques ordinarily taught in grades 1 to 3, although comprehension is important throughout the process of learning to read. Techniques that appear to be effective for teaching decoding skills now exist, and others are being developed. On the other hand, relatively little is known about how to teach comprehension.

The issue of comprehension is being addressed through basic research on information processing. This term covers the efforts of many scientists who previously have not dealt with education, but who have developed ways of exploring the comprehension problem. This new interdisciplinary approach supports our understanding of how people acquire, store, process, and produce information. It draws on the work of scientists in various fields. For example, linguists are providing insights into syntactic, semantic, and text structures. Anthropologists are studying the ways in which different cultures organize and classify information. Psychologists are doing detailed analyses of the processes involved in comprehending text, including recognizing connections between statements, drawing simple inferences, and relating text to past knowledge. Applied psychologists and reading specialists are working on strategies for attacking and comprehending different kinds of materials, on using structured questions for setting up expectations about the material to be comprehended, and on approaches to making materials more comprehensible. Instructional techniques and materials derived from the information processing approach frequently agree with the intuitions of successful teachers. This congruence between theory and experience creates a situation in which there is confidence that this line of research will have important long-range effects.

Dissemination and use of educational R&D.--Currently, there is a serious lack of consistent and systematic sharing and use by schools of information and products derived from educational R&D. In recognition of this condition, the Office of Education and the National Institute of Education have each developed programs designed to increase access to and use by schools of R&D results. In addition, State education agencies have begun to move more and more into a service role with respect to their client schools. This additional focus is clearly stated in the 1976 Interstate Project on Dissemination (discussed later) which was adopted by the Conference of Chief State School Officers.

The next section deals with recent dissemination efforts, particularly at the Federal level.

DISSEMINATION OF EDUCATIONAL RESEARCH AND INFORMATION SERVICES

The Education Division of the Department of Health, Education, and Welfare is committed to providing the Nation's teachers and ad-

ministrators with the best results of educational research and development (R&D) and current practice. In recent years, the concept of educational R&D has increasingly been accompanied by that of dissemination and evaluation, so that most, if not all, programs within the Education Division include some dissemination activities. The major dissemination efforts, however, are carried out by the National Institute of Education's Dissemination and Resources Group, the Office of Education's National Diffusion Network, and the National Center for Education Statistics through its reports and publications. These efforts are intended to facilitate the exchange of innovative ideas and effective programs, disseminate research efforts related to education, and report the condition and progress of American education. This section describes selected dissemination programs and activities, primarily of the Education Division.

National Institute of Education (NIE)

The Dissemination and Resources Group (DRG) is one of six NIE program groups, each of which focuses upon a major priority in education--(1) Basic Skills, (2) Finance and Productivity, (3) Equity, (4) Education and Work, (5) Dissemination, and (6) School Capacity for Problem Solving. (The second and sixth programs together focus on the priority area earlier listed as "finance, productivity, and management.") The purpose of DRG is to improve the dissemination and use of knowledge for solving educational problems, and to study, evaluate, and improve the capabilities of institutions and individuals to produce and use knowledge in improving education. Programs of DRG reflect a belief that effective production and use of knowledge and innovative practice for educational improvement must build upon the resources and strengths of the Nation's education system and R&D communities.

DRG relies upon four principal strategies to provide a coherent program structure: (1) Strengthening existing system elements in order to build improved dissemination capacity within the educational system; (2) adding critical elements that would not emerge without Federal subvention; (3) helping to connect, coordinate, and reconfigure system elements in order to enhance the linkages between the R&D and practice communities; and (4) developing improved understanding of the processes and subsystems involved in knowledge production and utilization activities.

Strengthening existing system elements.--Regardless of the quality and availability of education information, improved knowledge utilization within the education community will not occur until the educational infrastructure has a continuing capacity to use and disseminate knowledge resources. One important key to increasing dissemination capacity within the system is the State education agency (SEA), first, because it is the level of government that is constitutionally responsible for education; and secondly, because State agencies have more and more moved into a service role with respect to their client school systems. Although dissemination programs exist in each of the State education agencies, including those of the District of Columbia and U.S. Territories, the programs for the most part have been fragmented and lack the comprehensiveness needed to meet the information needs of educa-

tion within a State. Recognizing this, OE in 1970 initiated a pilot effort to assist a small number of SEA's in correcting this situation. Oregon, South Carolina, and Utah were the first States to participate in the program, and they were followed by Florida, Iowa, Kansas, Massachusetts, Rhode Island, and Texas. That pilot effort has emerged into what is now known as the State Dissemination Capacity Building Program, which has been under the sponsorship of NIE since 1975. To date, NIE has made awards to 24 States to build a comprehensive generalized dissemination capacity. Support is provided for building (1) a comprehensive knowledge resource base, (2) linkage to serve clients, and (3) leadership within the agency to provide for maintaining and enhancing dissemination services in the future. In addition, several special purpose grants have been awarded to States for support of short-term efforts that focus upon a specific dissemination problem within that State.

Adding critical elements.--Many of DRG's efforts are designed to assure broader, more effective, and more comprehensive availability of knowledge to educators through developing and supporting system elements that would not evolve without Federal help. The Educational Resource Information Center (ERIC) represents a major program responsibility of this type. ERIC is a national information dissemination system created by the Office of Education in 1965 and supported and administered by NIE since 1973.

ERIC uses a nationwide network of 16 clearinghouses to acquire and provide access to significant educational report and journal literature, to produce information analysis products, and to render a number of other user services. Each clearinghouse specializes in a particular subject area of education: Career education; counseling and personnel services; early childhood education; educational management; handicapped and gifted children; higher education; information resources; junior colleges; languages and linguistics; reading and communication skills; rural education and small schools; science, mathematics, and environmental education; social studies/social science education; teacher education; tests, measurement, and evaluation; and urban education. More detail on the subjects covered by these clearinghouses is given in appendix B.

The separate clearinghouses are integrated through a central computerized facility capable of serving as a "switching" center for the entire network. This centralized data base enables those who use ERIC to have access to data and products covering the full range of education.

Documents from local, State, national, and international sources are abstracted, indexed, and processed by the ERIC Processing and Reference Facility (Operations Research, Inc.) in Bethesda, Maryland for announcement in the abstract journal, *Resources in Education (RIE)*. Another product of ERIC is the *Current Index to Journals in Education (CIJE)*, which indexes articles from more than 700 educational periodicals.

The majority of *RIE* documents are made available for study on microfiche at the approximately 600 locations (public libraries, universities, Government agencies, and professional associations) that have an ERIC microfiche collection. About 80 percent of the material cited in each issue of *Resources in Education* is available from the ERIC Document Reproduction Service, Arlington, Virginia, in either microfiche or photocopy format. The remaining 20 percent is available from the publishers. *CIJE* entries can be obtained from the original journals. A principal ERIC reference tool is the *Thesaurus of ERIC Descriptors*, which is the source of subject headings used in *RIE* and *CIJE* indexes.

Since ERIC is primarily a research information resource, it cannot be expected to meet easily the needs of teachers and administrators for information that is readily applicable to day-to-day operation of schools. For this reason, DRG's consumer information activities are quite important. In addition to developing the *1975 Catalog of NIE Education Products*, which includes descriptive information about some 660 products supported in whole or in part by NIE, DRG also supports R&D on the processes of transforming or interpreting the findings of R&D for practice. DRG has also supported the development of several highly successful interpretive reports in selected problem areas for use by teachers and administrators.

Connecting, coordinating, and reconfiguring the system.--Most of DRG's activities have the objective of improving the linkage and coordination among the several components of the education practice and research communities.

For example, DRG is supporting the Research and Development Exchange (RDx), which is operated by a consortium of regional educational laboratories and a university-based research and development center. The goal of RDx is reflected in its name: to create an exchange of information. Currently, the regional exchanges conduct both dissemination and "feedforward" activities in their respective regions of the country. RDx dissemination activities involve providing practitioners with access to information that will allow them to match R&D outcomes to their needs. The goal is to increase the availability and to improve the quality of information about R&D outcomes in areas of critical user need. RDx feedforward activities involve developing techniques to enable practitioners to communicate their needs, concerns, and findings back to the R&D community. While researchers and developers have used feedback techniques to fine-tune products and process, the intent of RDx feedforward activities is to help practitioners actually influence the character and responsiveness of future R&D work.

The regional exchanges serve educational practitioners primarily through intermediate linkages affiliated with State Departments of Education. That is, each cooperating State education agency has one or more contact persons on whom schools call when they are in need of human and material resources. This linker, in turn, refers questions or requests to the regional exchange.

Regional exchanges serve State education agencies in several ways. They function as a central depository for information and products, provide referral services, and perform technical assistance. They also facilitate the spread of information about locally produced exemplary practices and products within States and regions.

Four central services support the regional exchanges in their efforts to serve State education agencies: (1) Linkage Training Service, which provides training, consultation on training, and related support for indivduals responsible for dissemination activities; (2) R&D Interpretations Service, which is experimenting with transforming R&D-based knowledge into forms that can be used more readily by educational practitioners; (3) Resource and Referral Service, which is building a data bank of available information resources; and (4) System Support, which facilitates the operation of the total R&D Exchange. Each of these services is made available to other dissemination groups.

An example of DRG efforts to coordinate system elements is the National Dissemination Leadership Project, begun in 1969 by the Office of Education with dissemination representatives from each State. Since 1972, it too has been administered by NIE as a means of fostering communication among SEA's and between SEA's and NIE concerning dissemination policies, strategies, and practices. The program provides a forum for exchange of information about improved dissemination techniques and opportunities for mutual efforts to respond to the information needs of educators. (A further description of the Project is given later in this chapter.)

Understanding processes and systems for using and producing knowledge.--Understanding the connections between R&D and practice is required in order to improve them. There is a need, therefore, for research that traces dissemination flows among principal system actors and senses the impediments and unmet information needs of all system members, especially practitioners and decisionmakers.

Since 1976, through the R&D Utilization Program, DRG has supported and studied, in a variety of settings, alternative ways of increasing school use of materials and practices derived from educational R&D. Seven R&D utilization projects link resources of regional and State education agencies, R&D organizations, and higher education institutions to local education agencies and school sites with locally identified problems for the purpose of assisting them in systematically analyzing and resolving those problems using R&D-based solutions.

Although the seven projects differ in a number of significant ways, they have certain common activities, among which are the following:

- Identifying specific educational problems at each school site.
- Increasing the knowledge of local school personnel about the availability and utility of R&D results.

- Developing and using information on available R&D-based programs and practices.

- Selecting and adapting specific programs (solutions) based on locally developed criteria and needs.

- Delivering technical assistance to local schools through use of "linking" staff located at State education agencies or intermediate service agencies. The staff links the schools with various resources available from cooperating universities and other organizations knowledgeable about educational change.

- Implementing the selected R&D-based program at the local site.

The purpose of the overall R&D Utilization Program is to provide services that help schools use R&D-based innovations to improve educational practice. The program's orientation, however, is action research; about 20 percent of the total effort is directed toward studying and assessing project activities. The seven projects provide an unusual opportunity to look at more than 200 school sites in order to learn how to stimulate and support changes that lead to improvements in educational practice. More specifically, the evaluation will provide information to--

- Guide Federal and State policies intended to improve programs providing change services to local schools.

- Identify successful management techniques that can be used to govern and operate such services.

- Enrich present theoretical and research knowledge about the processes of managing change in education.

The evaluation/documentation effort will produce detailed case studies of how local sites, working with linker personnel and outside organizations, plan and implement R&D-based program changes. Evaluation outputs will also include a number of analytical studies of the various linkage networks used in the projects to provide technical assistance services to the local sites. Still other studies will analyze costs associated with program improvement, the usefulness of R&D outcomes in local problem-solving efforts, and the impact of program improvement efforts on student achievement.

Office of Education

Both the National Institute of Education and the Office of Education have administered Federal support for R&D and the dissemination of research results. While the Education Amendments of 1972 set up the National Institute of Education to specialize in R&D and restructured the authority for education programs in DHEW, certain responsibilities for R&D remained with the Office of Education; namely, R&D in handicapped, vocational, and international education, and support of the two Education Policy Centers located at Stanford University and Syracuse University.

A major difference exists between OE and NIE in how program priorities are defined and resources allocated. NIE's programs are primarily carried out within a very broad and single authority; in contrast, OE's programs stem from a wide range of legislative authorizations, each stating different objectives. Legislative acts related to OE, such as Title II of the Elementary and Secondary Education Act, have stimulated growth in R&D activity.

R&D in education for the handicapped.--To meet the Federal objective of improving the effectiveness of programs for handicapped children, the Innovation and Development Program authorized by Part E of the Education of the Handicapped Act (Public Law 91-230) supports research, development, diffusion, and adoption activities. The program's purpose is to raise the effectiveness and efficiency of the education system's provision for handicapped children by helping develop and validate new models, packaging information about them in usable form, and assuring that the information is systematically placed in appropriate hands. This Innovation and Development Program is designed to provide direct support to carrying out the mandates of the Education for All Handicapped Children Act of 1975.

R&D in vocational education.--The Division of Research and Demonstration in the Bureau of Occupational and Adult Education has responsibility for R&D in vocational education. Research and training are authorized by Part C of the Vocational Education Act as amended in 1968. Funds are used for research; for training to familiarize personnel with research results and products; for developmental, experimental, or pilot programs designed to meet special vocational education needs; for demonstration and dissemination projects; for establishing and operating State Research Coordinating Units (RCU's); and for supporting research, development, and demonstration efforts at the State level.

An RCU is a State unit officially designated to administer a State's vocational education research programs and to disseminate research findings to administrators, teachers and counselors, and teacher educators. Many RCU's now operate an extensive information retrieval and dissemination system, carry out evaluation, and coordinate the exemplary projects funded under the Act.

Dissemination and utilization of the output of research projects is achieved by the State RCU's and the National Network for Curriculum Coordination in Vocational and Technical Education. The latter is funded on a calendar-year basis. There were six centers in 1975--in California, Illinois, New Jersey, Oklahoma, Mississippi, and Washington --that formed the network to facilitate improved curriculum development and maximize the use of existing resources and materials by State and local instructional materials developers.

The Education Amendments of 1976 amended the Vocational Education Act of 1963 to modify the vocational education authority to allow support of a national center for research. The Amendments also directed the Office of Education to give primary support to projects of national and/or regional significance.

R&D in international education.--Under Title VI, Section 602, of the National Defense Education Act of 1958, as amended, the Foreign Language and Area Studies Research Program is authorized to support studies, surveys, and the preparation of specialized materials to improve and strengthen instruction in modern foreign language and area studies. Financial assistance is provided to a wide range of activities, including studies of status, needs, and priorities in international studies; and development and testing of instructional materials, teaching methods, and curricular approaches to foreign language, area studies, and other aspects of international education, particularly with regard to the world outside Western Europe.

Since the beginning of this program, approximately 750 contracts and grants have been awarded for at least three times as many projects. A cumulative annotated bibliography covering the entire program output is published from time to time. The current edition is *List No. 8: Foreign Language, Area, and Other International Studies* (available from the Division of International Education, Bureau of Higher and Continuing Education). Copies of most of the completed research may be obtained through the publishers or the ERIC system (described earlier in this chapter).

National Diffusion Network (NDN).--Title III of the Elementary and Secondary Education Act (1965) established new mechanisms for delivering services previously available to individual schools. The Office of Education used Title III funds to link R&D with practice through such mechanisms as (1) Supplementary Centers, which are the focal point for delivering innovative services to individual schools, and (2) the State Identification, Validation, Dissemination (IVD) Process, whereby projects may become part of a pool of exemplary projects for statewide dissemination (implemented by States with developmental assistance from the Office of Education).

The Office of Education in 1974 established the National Diffusion Network to help State and local education agencies throughout the Nation select, adopt, and replicate successful programs. NDN is providing the opportunity for every school to share in the success of all federally funded programs.

Before programs are disseminated by NDN, they must be approved by the Joint Dissemination Review Panel, a group of officials drawn from the Office of Education and the National Institute of Education. The panel was estblished to assure quality control of educational products and projects recommended for replication. The panel's responsibility is to review and approve for dissemination purposes any federally funded education program or project that can offer persuasive, objective evidence that it has produced significant change in students it has served and is worthy of diffusion in other school districts. By July 1977, the Panel had approved 161 programs.

The Office of Education is funding 61 "State Facilitators," (located in 47 States) to help schools in their States. Each facilitator follows a pattern of dissemination (making schools aware of the approved programs) and diffusion (enabling schools to adopt particular pro-

grams). In the diffusion process, an interested school or district assesses its need and consults with parents, teachers, administrators, school board members, and other community members, so that the chosen program not only matches the need but also reflects the interests of all. Facilitators help schools and districts conduct needs assessments, select appropriate programs, arrange visits to project sites by school and community representatives, and provide adoption grants.

During 1975-77, the Office also funded 87 out of the 161 approved programs as "Developer-Demonstrator" projects. Developer-Demonstrators provide information, training, materials, and advice to school districts interested in their programs. When a school or district has decided to adopt, the Developer-Demonstrator provides services such as staff training and technical assistance as needed, monitors the adoption, and conducts an evaluation of the results.

NDN offers schools a cost-effective, easy to adopt, model program. Local commitment and support are required, but a school can adopt one of the approved programs at a fraction of the cost originally invested in R&D.

Exemplary programs approved for dissemination, but not funded by the Office of Education as Developer/Demonstrators, are also made available to interested school districts, as are six Project Information Packages (PIP's) featuring successful approaches to providing "compensatory" education.

National Center for Education Statistics (NCES)

Established in 1965, the National Center for Education Statistics was designated as part of the Office of the Assistant Secretary for Education by the Education Amendments of 1974, which added section 406 to part A of the General Education Provisions Act. The amendment expanded the Center's mission to include four principal mandates by specifying that NCES shall:

- Collect, and from time to time, report full and complete statistics on the condition of education in the United States.
- Conduct and publish reports on specialized analyses of the meaning and significance of such statistics.
- Assist State and local educational agencies in improving and automating their statistical and data collection activities.
- Review and report on educational activities in foreign countries.

The Education Amendments of 1976 assigned NCES another mandate, namely--

- To conduct a continuing survey of institutions of higher education and local educational agencies to determine the demand for, and the availability of, qualified teachers and adminis-

trative personnel, especially in critical areas within education which are developing or are likely to develop, and assess the extent to which programs administered in the Education Division are helping to meet the needs identified as a result of such continuing survey.

The legislation also directed NCES to develop with the Office of Education information elements and uniform definitions for a national vocational education data reporting and accounting system.

The two components of the Center's program are statistical services and education statistics.

Statistical services.--NCES collects and reports information from institutions and individuals that provides a comprehensive and flexible data base describing education and its effects. The base includes both a consistent core of data that delineates the essential features of the education enterprise and those who participate in it and also a varied, detailed flow of information that bears on changing policy issues. Information is gathered on such topics as trends in elementary and secondary education, the changing nature of postsecondary education, financing educational institutions, the educational attainments of persons, the status of educational personnel, libraries, and educational activities in foreign countries.

Education statistics.--NCES provides services to users including activities in the areas of assistance, analysis, and dissemination. Assistance is provided to State and local education agencies to develop and implement compatible education data systems. The Center also conducts analyses of the meaning and significance of education statistics and dissemination of data, through a variety of modes acknowledging the differing needs of users. In addition, NCES participates in Federal interagency activities to coordinate data collection, to minimize respondent burden, and to protect the confidentiality of persons in the collection, reporting, and publication of data.

Other Programs

Change in education practice is strongly influenced by certain linkage facilities and programs that are sponsored by units like State Departments of Education and local education agencies and provide a variety of services to instructional and administrative staffs. Models of linkage differ in type and level of service, sponsorship, and interface with clientele. They include traditional libraries of teacher-training institutions, school study councils, teacher centers, ERIC clearinghouses, regional education laboratories, and education R&D centers. Examples of diverse models follow.

Educational Products Information Exchange (EPIE) is a national, non-profit, "consumer testing service" that reports on educational products. The EPIE Institute (New York City) was created to catalog and evaluate education products. It has produced a number of reviews

of products, curriculums, and other educational innovations. The Institute publishes EPIEGRAM, the educational consumer's newsletter, twice a month.

Research and Information Services for Education (RISE) is an ERIC-based information service in King of Prussia, a suburb of Philadelphia, Pennsylvania, that meets local educators' information needs in a variety of ways, from sponsoring workshops to the collection of useful documents.

School Research Information Service (SRIS) is a research service of the professional education association, Phi Delta Kappa. The association provides bibliographies and publishes a quarterly journal on current thinking concerning research and innovation in education.

The Institute for the Development of Education Activities, Inc. (IDEA) distributes information about selected innovations. Much of the information is on films. Through the financial assistance of its parent organization, the Kettering Foundation, IDEA provides support for implementing selected innovations.

The NETWORK (Merrimac, Mass.) is a nonprofit organization that has provided various services to public and non-public schools in Massachusetts and other States. For example, it assists administrators and teachers in developing more effective child-centered programs. It offers programs in management training, staff evaluation, and special needs. Major projects of the NETWORK include the Massachusetts Diffusion Assistance Project and the National Learning Disabilities Assistance Project. The NETWORK/NALDAP Information Resources Center is an example of a specialized center serving a restricted clientele (i.e., Learning Disabilities Demonstration Centers) in contrast to the general service offered by the comprehensive centers.

Coordination

There is, as yet, no clear plan for a national policy that would encompass all of the various dissemination and information activities in education that are engaged in by all of the different agencies of the Federal Government, State agencies, local school systems, universities, and other organizations. Even at the Federal level, educational activities that involve dissemination are conducted by more than 20 different agencies. Different pieces of legislation have separate provisions for dissemination of the results of that legislation.

Federal coordination of educational R&D is not the responsibility of any single agency; it is embodied in a variety of interagency panels, committees, and ad hoc task forces. The key Government groups are the following:

Federal Interagency Committee on Education (FICE).--To attempt to bring about cooperative action among the various agencies engaged in education, the Federal Interagency Committee on Education was established at the departmental level by Executive order. Chaired

by the Assistant Secretary for Education of DHEW, FICE consists of 24 member and 5 observer agencies. Representatives of these agencies meet monthly to examine education needs and make policy recommendations to the President. Much work is accomplished through subcommittees focused on specific issues. In 1975, FICE established a Subcommittee on Educational Research, Development, Dissemination, and Evaluation, chaired by the Director of NIE. The subcommittee has examined various data bases and dissemination channels available. It is seeking ways to facilitate the exchange of information on activities of member agencies.

Interagency Panel on Early Childhood Research and Development and the Interagency Panel for Research and Development on Adolescence.--These interagency panels define their domain in terms of age groups and are not limited to educational concerns. They sponsor data collection and publish reports on Federal research and development activities. These panels were commissioned by the Secretary of DHEW to plan, analyze, and coordinate R&D agendas pertaining to their designated age groups. Membership extends beyond DHEW organizations to include other Federal agencies such as the Department of Agriculture, the Department of Commerce, and AID. Both NIE and OE hold active membership in both panels with representation by program staff from most of their R&D programs. The panels are supported by annual contributions from agency members, supplemented by contract support from the Division of Research and Evaluation, Office of Child Development, for project level data collection and analysis. The Interagency Research Information System (IRIS) attached to these panels is currently operated by the Social Research Group at George Washington University.

National Council on Educational Research.--The National Council on Educational Research (NCER) is the policymaking board of NIE, a panel of 15 citizens appointed by the President and confirmed by the Senate. NIE's legislation requires that NCER be broadly representative of the educational community and the general public. NCER establishes program priorities for the National Institute of Education and provides a forum for discussing the chief policy issues facing educational R&D. The Congress requires NCER to make an annual report to the President and the Congress on American education, educational R&D, and NIE.

Federal Council on Educational Research and Development.--This council is being established at the NIE level under the Education Amendments of 1976 to coordinate research activities throughout the Federal Government. It will be an inter-Federal group made up of representatives from Federal agencies rather than public members and will be advisory to the NIE director. (Part II, chapter 1, contains more information on the Council.)

Dissemination Policy Council.--Within the Education Division of the Department of Health, Education, and Welfare there has been an effort to develop a unified nationwide policy on dissemination through creating the Dissemination Policy Council. This council is

charged with improving the organization of, the implementation of, and the coordination between and among the myriad dissemination activities of DHEW education programs.

Chaired by a member of the immediate staff of the Assistant Secretary for Education, DCP consists of two representatives each from OE and NIE and one from NCES. It reviews decisions of OE and NIE dissemination efforts that need joint policy procedure, either because they are in potential conflict or for some other reason, and establishes a policy to handle such situations.

Joint Dissemination Review Panel (JDRP).--The Joint (NIE and OE) Dissemination Review Panel was established approximately 4 years ago to assure that Government-disseminated products and practices are of high quality and that both agencies apply uniform criteria for judging the evidence of the effectiveness of those products. To achieve this end, the panel, which is composed of 22 members appointed by the Commissioner of Education and the Director of NIE, reviews evidence concerning effectiveness of the federally disseminated products.

National Dissemination Leadership Project (NDLP).--Funded by the National Institute of Education through the Council of Chief State School Officers, the National Dissemination Leadership Project facilitates communication among State education agencies, NIE, and other agencies and individuals concerned with developing and improving dissemination programs in education. It sponsors national, regional, and topical conferences for State education agency personnel assigned to dissemination activities. Its most recent annual meeting in Washington, D.C., in June 1977 served as a nucleus about which various other dissemination interest groups convened (e.g., OE's National Diffusion Network and NIE's ERIC directors and staff groups). (See earlier discussion under section on NIE.)

Interstate Project on Dissemination (IPOD).--An important ad hoc project, the Interstate Project on Dissemination, grew out of a planning activity of NDLP. The National Institute of Education awarded a study grant to an interstate group to design and conduct an analysis of State education agency perspectives on issues relevant to Federal-State dissemination roles. States participating in this Interstate Project on Dissemination (IPOD) included Kentucky, Montana, New Jersey, North Carolina, Oregon, Rhode Island, and Texas. The resulting IPOD report outlines a framework for planning in dissemination and presents a series of recommendations for policy action. The following policy recommendations were made:

1. That the educational community adopt a consistent statement relative to dissemination activities and possibilities for expanding their scope.

2. That State education agencies recognize dissemination as a major function and move toward development of a coordinated, integrated system within each agency.

3. That roles and responsibilities of organizational units under the Assistant Secretary for Education be clearly delineated in relation to dissemination.

4. That a plan for a nationwide system for sharing educational knowledge be developed and implemented.

5. That adequate resources be allocated for dissemination activities at both the State and Federal levels and that legislation encourage development of an agencywide dissemination function at all levels.

6. That NIE and OE, in coordination with the National Dissemination Leadership Project, provide for identification or development of technical assistance and for access to such assistance by States as they develop dissemination capabilities.

7. That programs of inservice and preservice training be developed and funded.

8. That dissemination activities be regularly reevaluated in light of the state-of-the-art and recommendation for improvement be made.

These recommendations provide an excellent basis for strengthening Federal and State coordination in the dissemination of educational information.

NOTES

1 *The Status of Education Research and Development in the United States, 1976 Databook.* Washington, D.C.: National Institute of Education, 1976.

2 Mason, Ward S. and Craig, Bruce. *Federal Support for Education Research and Related Activities,* FY 1975-77. Preliminary Report. Washington, D.C.: National Institute of Education, 1976.

Appendixes

APPENDIX A. SELECTED EDUCATION AND EDUCATION-RELATED LAWS PASSED BY THE 94TH CONGRESS: MAY 1974 THROUGH OCTOBER 1976

Public Law No.	Title of Law	Date Signed into Law
93-278----	Environmental Education Amendments of 1974. Extends the Environmental Education Act for 3 years.	May 10, 1974
93-380----	Education Amendments of 1974. Omnibus education act amending the Elementary and Secondary Education Act of 1965. Creates new Special Projects Act to support programs for metric education, gifted and talented children, community schools, career education, arts in education, and women's equity in education. Also creates "Family Educational Rights and Privacy Act of 1974," a provision that would deny Federal funds to an educational agency or institution that has a policy of denying parents the right to inspect and review the educational records of their children.	Aug. 21, 1974
93-422----	Alcohol and Drug Abuse Education Act Amendments of 1974. Extends the Drug Abuse Education Act of 1970 for 3 years.	Sept. 21, 1974
93-568----	White House Conference on Library and Information Services	Dec. 31, 1974
93-638----	Indian Self-Determination and Education Assistance Act	Jan. 4, 1975
93-644----	Headstart, Economic Opportunity, and Community Partnership Act of 1974	Jan. 4, 1975
94-23 ----	Indochina Migration and Refugee Assistance Act. Later amended to include refugees from Laos.	May 23, 1975
94-105----	National School Lunch and Child Nutrition Act Amendments of 1975	May 7, 1975
94-135----	Older Americans Act Amendments of 1975	Nov. 28, 1975

94-142----	Education for All Handicapped Children Act of 1975	Nov. 29, 1975
94-158----	Arts Artifacts Indemnity Act. Provides for improving museum services and giving the Federal Council on the Arts and Humanities authority to indemnify certain artifacts.	Dec. 20, 1975
94-161----	International Development and Food Assistance Act of 1975. Authorizes assistance for disaster relief and rehabilitation, provides for overseas distribution and production of agricultural commodities, and amends the Foreign Assistance Act of 1961. Under chapter 2, part I of this Act, "Title XII--Famine Prevention and Freedom from Hunger," the Congress declares that the "United States should strengthen the capacities of the United States land-grant and other eligible universities in program-related agricultural institutional development and research...should improve their participation in the United States Government's international efforts to apply more effective agricultural sciences to the goal of increasing world food production, and in general should provide increased and longer term support to the application of science to solving food and nutrition problems of the developing countries."	Dec. 20, 1975
94-168----	Metric Conversion Act of 1975. Encourages programs to aid conversion to the metric system.	Dec. 23, 1975
94-192----	Public Broadcasting Financing Act of 1975. Provides long-term financing for the Corporation for Public Broadcasting.	Dec. 31, 1975
94-309----	Educational Broadcasting and Telecommunications Demonstration Act of 1976	June 5, 1976
94-405----	Indochina Refugee Children Assistance Act of 1976	Sept. 10, 1976
94-461----	Sea Grant Program Improvement Act of 1976. Authorizes funds through Fiscal Year 1979 to improve the National Sea Grant College program.	Oct. 8, 1976

94-462----	Arts, Humanities, and Cultural Affairs Act of 1976. Authorizes funds through Fiscal Year 1980 for programs of the National Foundation on the Arts and the Humanities.	Oct. 8, 1976
94-482----	Education Amendments of 1976. An omnibus education act amending the Higher Education Act of 1965 and the Vocational Education Act of 1963. Also creates new programs for life-long learning, career education and career development, and guidance and counseling.	Oct. 12, 1976
94-505----	Title II establishes an Office of Inspector General in HEW.	Oct. 15, 1976

APPENDIX B. DIRECTORY OF ERIC CLEARINGHOUSES

ERIC was established by the U.S. Office of Education (OE) in the mid-1960s when the literature of education was relatively uncontrolled. At that time, research reports submitted to OE by contractors and grantees usually received scattered distributions and soon disappeared. ERIC was designed to correct this situation by providing a more solid base for spreading acceptance and use of worthwhile educational developments.

Because of the decentralized nature of U.S. education, ERIC designers decided on a *network* of clearinghouses rather than a single monolithic center in Washington, D.C. These Clearinghouses were based in host organizations (mainly universities and professional associations) which were well established and had good contacts with practitioners and researchers in their respective fields. Contracts developed with these units gave them responsibility for acquiring, critiquing, and selecting all documents in their subject areas, as well as for cataloging, indexing, and abstracting them. This scheme has worked well. Over time, the Clearinghouses appear to have done a better job of ferreting out and processing the current literature of education than would ever have been possible through a single center.

But decentralization alone was not expected to provide all the answers. To develop data base reference resources and related services, and to generate information products needed, the separate Clearinghouses had to be integrated through a central computerized facility capable of serving as a "switching" center for the entire network. This centralized data base enables those who use ERIC to have access to data and products covering the full range of education.

The following directory provides annotations concerning Clearinghouse and service unit titles, addresses, telephone numbers, administrative heads, and functions of national, field, and supportive service units related to the Educational Resources Information Center (ERIC) system as a whole.

Central

ERIC Central (Educational Resources Information Center), National Institute of Education, Office of Dissemination and Resources, Washington, D.C. 20208. (202) 254-5555. Charles Hoover, Chief. Maintains the coordinating staff for the ERIC System; develops policies; monitors budgets; reports on system activities, accomplishments, and needs.

Clearinghouses

Each of the sixteen Clearinghouses specializes in a particular subject area of education, and is responsible for collecting all relevant unpublished, noncopyrighted materials of value in that area. The overviews that follow list subject areas of each Clearinghouse. More detailed descriptions of subject coverage and activities can be obtained from the Clearinghouses themselves.

Eric Clearinghouse on Career Education (CE), Ohio State University, Center for Vocational Education, 1960 Kenny Road, Columbus, Ohio 43210. (614) 486-3655. Joel H. Magisos, Director. Career education, formal and informal at all levels, encom-

passing attitudes, self-knowledge, decision-making skills, general and occupational knowledge, and specific vocational and occupational skills. Adult and continuing (including non-work) education, formal and informal, including basic and literacy education, correspondence study, and all areas of inservice training, relating to occupational, family, leisure, citizen, organizational, and retirement roles. Vocational and technical education, including new subprofessional fields, occupational psychology, occupational sociology, manpower economics, employment, industrial arts, and vocational rehabilitation (for the handicapped, mentally retarded, prisoners, discharged military, etc.). Local, state, national, and international career education policy.

ERIC Clearinghouse on Counseling and Personnel Services (CG), University of Michigan, School of Education Bldg., Rm. 2108, E. University and S. University Sts., Ann Arbor, Mich. 48104. (313) 764-9492. Garry R. Walz, Director. Counselors and personnel workers, their preparation, practice and supervision at all educational levels and in all settings; the use and results of personnel procedures such as testing, interviewing, group work, and the analysis of the resultant information relating to the individual and his environment; the theoretical development of counseling and guidance; the nature of pupil, student, and adult characteristics; descriptions of educational, occupational, rehabilitation, and community settings; the types of assistance provided by personnel workers in such areas as education and career planning, parent and family consultation, teacher consultation and student activities; problems of aging; dropout identification, prevention, and rehabilitation; counseling with special population groups, e.g., prisoners, women, youth groups, minority groups, pregnant teenagers, alcoholics, and drug abusers; drug education; sex education.

ERIC Clearinghouse on Early Childhood Education (PS), 805 W. Pennsylvania Ave., University of Illinois, Urbana, Ill. 61801. Lilian G. Katz, Director. (217) 333-1386. Prenatal factors; parental behavior; the physical, psychological, social, educational, and cultural development of children from birth through the primary grades; educational theory, research, and practice related to the development of young children, including teacher preparation, educational programs and curricula related community services, groups and institutions, administration, and physical settings as well as theoretical and philosophical issues.

ERIC Clearinghouse on Educational Management (EA), Library (South Wing), University of Oregon, Eugene, Ore. 97403. (503) 686-5043. Philip K. Piele, Director. Administration of education (theory and practice at elementary and secondary levels); management, leadership, and structure of public and private educational organization; preservice and inservice preparation of administrators; processes of administration (finance, planning; personnel, law, etc.); educational organizations (methods and variations, change, social context). Educational facilities at all levels (sites, buildings, equipment); planning, financing, constructing, renovating, equipping, maintaining, operating, insuring, utilizing, and evaluating educational facilities; advancing educational programs via facilities and plant; influences of the physical environment on learning.

ERIC Clearinghouse on Handicapped and Gifted Children (EC), CEC Information Center, The Council for Exceptional Children, 1920 Association Dr., Reston, Va. 22091. Donald Erickson, Director. (703) 620-3660. The education of children and youth deemed exceptional: the gifted, the aurally handicapped, visually handicapped, mentally handicapped (retarded), physically handicapped, socially maladjusted, emotionally disturbed, speech impaired, learning and neurologically disabled, homebound

and hospitalized, and the multihandicapped; behavioral, psychomotor, and communication disorders; cognitive functioning and learning problems of exceptional children; administration of special education programs and services; preparation and continuing education, learning and development of the exceptional child; general studies on creativity; statistics and incidence data relating to exceptional children; tho · ·with IQ 0-25 and IQ 140 and above.

ERIC Clearinghouse on Higher Education (HE), George Washington University, 1 Dupont Circle, Suite 630, Washington, D.C. 20036. (202) 296-2597. Peter P. Muirhead, Director. All aspects of higher education: student programs, conditions, and problems in colleges and universities; faculty; graduate and professional education; governance and the management of higher educational institutions including application of corporate management techniques (e.g., systems analysis, computer simulation, organization theory); legal issues; financing; planning and evaluation; facilities-structural design, management implication and impact on the education process; curriculum and instructional problems, programs, and development; university extension programs, interinstitutional arrangements and consortiums; related state and federal programs and policies; institutional research and statistics on higher education; higher education as a social institution and its relationship within society; and comparative higher education.

ERIC Clearinghouse on Information Resources (IR), Syracuse University, School of Education, Area of Industrial Technology, Syracuse, New York 13210. (315) 423-3640. Donald Ely, Director. Management, standards, operation, and use of libraries and information centers, the technology to improve their operations, and the education, training, and professional activities of librarians and information specialists; information transfer process, including research, application, development, and education. Educational techniques involved in microteaching, systems analysis, games and simulation, and programmed instruction employing audiovisual teaching aids and technology, such as television, radio, computers, and films; technology in society adaptable to education, including cable television, communication satellites, microforms, and public television.

ERIC Clearinghouse on Junior Colleges (JC), University of California (Los Angeles), 96 Powell Library, Los Angeles, Calif. 90024. (213) 825-3931. Arthur M. Cohen, Director. Development, administration, and evaluation of public and private community and junior colleges; junior college students, staff, curricula, programs, libraries, and community services.

ERIC Clearinghouse on Languages and Linguistics (FL), Center for Applied Linguistics, 1611 N. Kent St., Arlington, Va. 22209. (703) 528-4312. A. Hood Roberts, Director. Languages and language sciences; theoretical and applied linguistics; all areas of foreign language and linguistics instruction, pedagogy, and methodology; psychology of language learning; cultural and intercultural context of languages; application of linguistics and bilingualism in language teaching; psycho-linguistics; study abroad and international exchanges; related curriculum developments and problems; teacher training and qualifications specific to the teaching of foreign languages; commonly and uncommonly taught languages including English as a second language for speakers of other languages.

ERIC Clearinghouse on Reading and Communication Skills (CS), National Council of Teachers of English, 1111 Kenyon Rd., Urbana, Ill. 61801. (217) 328-3870. Bernard O'Donnell, Director. All aspects of reading—cognitive, affective, and psychomotor—and professional training, research, methodology, and organization of reading

instruction, including identification and diagnosis of reading ability and reading improvement. Teaching and learning English as a native language both as a symbol system and for speaking, listening, writing and reading literature. Educational journalism including learning and teaching of the creation, analysis, interpretation, and evaluation of journalism in print, electronic media, graphics, advertising, and public relations and training teachers at all levels. Speech sciences, action, theater, oral interpretation, public speaking, rhetoric, and communication theory.

ERIC Clearinghouse on Rural Education and Small Schools (RC), New Mexico State University, Box 3AP, Las Cruces, N.M. 88003. (505) 646-2623. Everett Edington, Director. Education of Indian Americans, Mexican Americans, and Spanish Americans; education of migratory farm workers and their children; the use of outdoor resources for recreation and as a setting for teaching of all disciplines; economic, cultural, and social factors related to educational programs in small schools and rural areas; reports and studies (not subject oriented) on non-metropolitan school systems; disadvantaged segments of rural and small school populations.

ERIC Clearinghouse on Science, Mathematics, and Environmental Education (SE), The Ohio State University, 1800 Cannon Dr., 400 Lincoln Tower, Columbus, Ohio 43210. (616) 422-6717. Robert W. Howe, Director. All levels of science, mathematics, and environmental education (elementary, secondary, higher, and continuing education); development of related curriculum and instructional materials; media; applications to science, mathematics, and environmental education with related methodological studies; impact of interest, intelligence, values, and concept development upon learning related to science, mathematics, and environmental education; related preservice and inservice teacher education and supervision.

ERIC Clearinghouse on Social Studies/Social Science Education (SO), Social Science Education Consortium, Inc., 855 Broadway, Boulder, Colo. 80302. (303) 492-8434. Irving Morrissett, Director. All levels of social studies and social science education; social studies teachers; content of the social science disciplines; applications of learning theory, curriculum theory, child development theory and instructional theory to social science education; research and development projects, programs, and materials in social science education; the contributions of social science disciplines (educational anthropology, economics, history, sociology, and psychology) to knowledge and understanding of the educational process and a successful educational operation; education as a social science; social science education and the community; religious education; the humanities; music education; art education; and comparative education.

ERIC Clearinghouse on Teacher Education (SP), 1 Dupont Circle, Washington, D.C. 20036. (202) 293-7280. Joost Yff, Director. School personnel at all levels from preschool through university education; encompassing all issues from selection through preservice and inservice preparation and training to retirement; curriculum-oriented research reports; educational theory and philosophy; Title XI NDEA Institutes (not covered by subject specialty in other clearinghouses); general reports on education not specifically covered by Educational Management; health, physical education, and recreation.

ERIC Clearinghouse on Tests, Measurement, and Evaluation (TM), Educational Testing Service (ETS), Rosedale Rd., Princeton, N.J. 08540. (609) 921-9000, X 2182. S. Donald Melville, Director. Tests, scales, inventories, or other measurement devices or instruments, including discussions of such instruments; test development and construction; reviews of tests; measurement and evaluation procedures and techniques;

applications and procedures of measurement or evaluation in educational projects of programs.

ERIC Clearinghouse on Urban Education (UD), Teachers College, Box 40, Columbia University, New York, N.Y. 10027. (212) 678-3780. Edmund W. Gordon, Director. The relationship between urban life and schooling; the effect of urban experiences and environments from birth onward; the academic, intellectual, and social performance of urban children and youth from grade three through college entrance (including the effect of self concept, motivation, and other affective influences); education of urban, Puerto Rican and Asian American populations, and rural and urban black populations; programs and practices which provide learning experiences designed to meet the special needs of diverse populations served by urban schools and which build upon their unique as well as their common characteristics; structural changes in the classroom, school, school system, and community and innovative instructional practices which directly affect urban children and youth; programs, practices, and materials related to economic and ethnic discrimination, segregation, desegregation, and integration in education; issues, programs, practices, and materials related to redressing the curriculum imbalance in the treatment of ethnic minority groups.

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[1] Reprinted from *ERIC: What It Can Do For You/How To Use It*, published by the National Institute of Education (Washington, D.C.: the Institute, 1977).

APPENDIX C. SELECTED REFERENCES: 1974 TO 1976

NON-GOVERNMENT PUBLICATIONS[1]

Benson, Charles S., et al. *Planning for Educational Reform: Financial and Social Alternatives*. New York: Dodd, Mead, 1974.
Argues that dollars per se are not education and how money is spent is more important than equalizing per-pupil expenditures.

Berke, Joel S. *Answers to Inequity: An Analysis of the New School Finance*. Berkeley, Calif.: McCutchan, 1974.
Reviews the history and status of school finance reform. Emphasizes the need for changes in entire public school finance system of States to meet school finance crisis.

Bernard, Harold W. and Wesley C. Huckins. *Humanism in the Classroom; an Eclectic Approach to Teaching and Learning*. Boston: Allyn and Bacon, 1974.
Based on investigations and evaluations of current educational innovations. Formulates rationale for innovative process, emphasizing interpersonal transactions rather than subject matter and its presentation.

Buergenthal, Thomas and Judith V. Torney. *International Human Rights and International Education*. Washington, D.C.: U.S. National Commission for UNESCO, Department of State, 1976.
Provides an overview of the fundamental international human rights documents and systems, traces the development of U.S. policy concerning international human rights, and summarizes relevant educational research and experience in this field.

Burrup, Percy E. *Financing Education in a Climate of Change*. Boston: Allyn and Bacon, 1974.
Stresses the need for greater acceptance of innovative and improved school finance practices, which are discussed in detail. Argues that only a greater role for the Federal Government can cope with rising costs.

Cook, David R. and N. Kenneth LaFleur. *A Guide to Educational Research*, 2d ed. Boston: Allyn and Bacon, 1975.
Intended primarily for beginning graduate students in research methods. Major feature is an analysis of various published research studies.

Cross, Patricia K. *Accent on Learning: Improving Instruction and Reshaping the Curriculum*. San Francisco: Jossey-Bass, 1976.
Describes many of the experiments in higher education learning-teaching today, emphasizing those that have been formally evaluated.

Dershimer, Richard A. *The Federal Government and Educational R & D.* Lexington, Mass.: D.C. Heath, 1976.
Primary purpose is to educate bureaucrats and research communities in the ways each operates. This is done by reviewing and analyzing events from 1954 to 1972 in Government agencies responsible for supporting educational R & D. (The author was for 10 years the executive officer of the American Educational Research Association.)

Education Development Center. *The Emerging Reform Movement in Secondary Education.* Newton, Mass.: the Center, 1974.
Report of a conference sponsored by the Education Development Center under a grant from the Rockefeller Brothers Fund to explore what role the schools play in the transition from youth to adolescence and how educators can best support the full intellectual, emotional, moral, and physical development of American adolescents.

Furniss, W. Todd, ed. *American Universities and Colleges,* 11th ed. Washington, D.C.: American Council on Education, 1975.
A reference on higher education in the United States, which describes 1,450 accredited 4-year colleges, with briefer descriptions of 100 professional schools.

Galfo, Armand J. *Interpreting Educational Research,* 3d ed. Dubuque, Iowa: William C. Brown, 1975.
Provides a general review of the evolution of research as a human endeavor, introduces the mathematical tools employed extensively in the behavioral sciences, and presents criteria for the evaluation of research literature.

Gay, L. R. *Educational Research: Competencies for Analysis and Application.* Columbus, Ohio: Charles E. Merrill, 1976.
A textbook for introductory educational research courses. Deals with problems, plans, samples, measuring instruments, research method and procedure, data analysis and interpretation, reporting, and evaluation.

Golubchick, Leonard H. and Barry Persky. *Urban, Social, and Educational Issues.* Dubuque, Iowa: Kendall/Hunt, 1974.
A book of readings which consider educational issues jointly with social and urban ones such as drug abuse, child abuse, prostitution, crime, racism, and poverty. Emphasis is on New York City. All levels of education are considered.

Goodlad, John I. *The Dynamics of Educational Change: Toward Responsive Schools.* New York: McGraw-Hill, 1975.
Based on a 5-year research project, The Study of Educational Change and School Improvement. Conceives of school as an "ecosystem."

House, Ernest R. *The Politics of Educational Innovation.* Berkeley, Calif.: McCutchan, 1974.

Develops the theme that most innovation is dependent on face-to-face personal contacts and that these contacts condition the occurrence and frequency of innovation.

Juster, F. Thomas. *Education, Income and Human Behavior.* A report prepared for the Carnegie Commission on Higher Education and the National Bureau of Economic Research. New York: McGraw-Hill Book Co., 1975.
A collection of essays on the impact of education on earnings and on human behavior. The essays reflect concern at the way higher education influences marriage patterns, family size, consumption, savings, and a cluster of social and political attitudes.

Kerlinger, Fred N., ed. *Review of Research in Education,* vols. 2 and 3. Itasca, Ill.: F. E. Peacock, 1974 and 1975 respectively.
Vol. 2 reviews research in child development and educational invention, the economics of education, organizational theory and research, and factor analysis in educational research methodology. Vol. 3 reviews research in learning and instruction, comparative education, teacher effectiveness, and analytic methods in studies of educational effects.

Lea, Beatrice, ed. *Education in the United States.* Washington, D.C.: National Education Association, 1976.
Contains a brief description of the structure, organization, administration, and method of financing of education in the United States.

Marin, Peter, et al. *The Limits of Schooling.* Englewood Cliffs, N.J.: Prentice-Hall, 1975.
A collection of essays that reject the institutionalization of experience and affirm that the damaging effects of schools are an inevitable and even intentional result of the schools' aims.

Menacker, Julius and Erwin Pollack, eds. *Emerging Educational Issues; Conflicts and Contrasts.* Boston: Little, Brown, 1974.
A book of readings presenting emergent educational issues within an analytical framework. The readings represent a wide variety of academic disciplines and social perspectives, with contrasting views given.

Millman, Jason and D. Bob Gordon, eds. *Appraising Educational Research; a Case-Study Approach.* Englewood Cliffs, N.J.: Prentice-Hall, 1974.
Emphasizes the need of good criticism in educational research. Eight critiques are included.

Morton, Richard J. and Jane Morton. *Innovation Without Renovation in the Elementary School.* New York: Citation Press, 1975.
A how-to-do-it book filled with practical ideas and suggestions for improving the elementary school.

National Association of Secondary School Principals. *Secondary Schools in a Changing Society: This We Believe*. Reston, Va. the Association, 1975.
Report of a task force commissioned to examine the nature of modern youth, the contemporary social scene, and the place of secondary education within that scene.

Novick, Melvin R. and Paul H. Jackson. *Statistical Methods for Educational and Psychological Research*. New York: McGraw-Hill, 1974.
Aims to serve as a psychologically oriented text at an elementary level which shows research workers and practitioners, through analysis on a step-by-step basis of real and relevant data in their field, how to use Bayesian methods in their work.

Radner, Roy et al. *Demand and Supply in U. S. Higher Education*. A report prepared for the Carnegie Commission on Higher Education. New York: McGraw-Hill Book Co., 1975.
The authors--econometricians--report on the results of a project designed to estimate statistically several aspects of demand and supply in U. S. higher education and to illustrate the possible uses of the resulting econometric models for policy research.

Rich, John Martin, ed. *Innovations in Education; Reformers and Their Critics*. Boston: Allyn and Bacon, 1975.
A book of readings, the first section containing essays by radical critics of the educational establishment and the second section containing examinations of specific educational innovations.

Rockart, John Fralick and Michael S. Scott Morton. *Computers and the Learning Process in Higher Education*. A report prepared for the Carnegie Commission on Higher Education. New York: McGraw-Hill Book Co., 1975.
An analysis of the use of the computer in instruction. The authors construct a model to find out not only what computers can do but what they cannot do in the instructional process. They conclude that the role of computers is likely to be one of enrichment rather than substitution for instruction offered in conventional ways.

Schwartz, Lita Linzer. *American Education; a Problem-Centered Approach*, 2d ed. Boston: Holbrook Press, 1974.
The first three chapters present historical and philosophical foundations of contemporary American education. The remaining chapters are problem-centered, mainly consisting of selections from other books.

Sjogren, Clifford F. *Diversity, Accessibility, and Quality: A Brief Introduction to American Education for Non-Americans*. New York: College Entrance Examination Board, 1976.
This paper examines aspects of American education that have particular importance in programs of student exchange, including the philosophical assumptions underlying American education, its

organization and control, descriptions of different kinds of institutions and the programs they offer, methods of increasing student performance, and quality control mechanisms.

Stubbs, Michael and Sara Delamont, eds. *Explorations in Classroom Observation*. New York: John Wiley, 1976.
Emphasizes the importance in educational research of direct observation of teachers and pupils inside classrooms. Explores the complexity of events in classrooms.

Toffler, Alvin, ed. *Learning for Tomorrow; the Role of the Future in Education*. New York: Random House, 1974.
This is *not* a book about the future of education. It is concerned with the way in which future time is dealt with in schools and universities. The contributors agree that today's schools and universities are too past- and present-bound and that introducing the future into curriculum and structure will bring needed reforms.

Volkmor, Clara B., et al. *Structuring the Classroom for Success*. Columbus, Ohio: Charles E. Merrill, 1974.
Part of a media package--filmstrips, tapes, and guidebook--which blends principles from the behavior management field with those of the open classroom concept to help teachers in the classroom.

Von Haden, Herbert I. and Jean Marie King. *Educational Innovator's Guide*. Worthington, Ohio: Charles A. Jones, 1974.
Treats 40 innovations, some of which are actually revivals. All are having an impact on education today with promise of greater influence to come. Intended as a guide to help practitioners.

Walberg, Herbert J., ed. *Evaluating Educational Performance; A Sourcebook of Methods, Instruments, and Examples*. Berkeley, Calif.: McCutchan, 1974.
A collection of reviews and studies that present various models and methods for evaluating education. Problems addressed are ones of practical evaluation for policy formulation, decisionmaking, and planned change.

Williams, John Delane. *Regression Analysis in Educational Research*. New York: MSS Information Corp., 1974.
This short text introduces student researchers and practicing educational researchers to the use of regression as a problem-solving technique.

Files, Patricia. *A Guide to Educational Resources 1975-76.* Stanford, Calif.: ERIC Clearinghouse on Information Resources, 1975.

Fletcher, Jerry et al. *Educational Dissemination in Relation to Public Elementary and Secondary Schools.* Report of the Dissemination Analysis Group to the Dissemination Policy Council (Preliminary Final Report). Washington, D.C.: U.S. Department of Health, Education, and Welfare, Sept. 30, 1976, (Mimeo.)

Martin, John Henry, chairman. *The Education of Adolescents.* Final Report and Recommendations of the National Panel on High Schools and Adolescent Education. Washington, D.C.: U.S. Office of Education, 1976.

McLaughlin, Donald H. *Career Education in the Public Schools. 1974-75: A National Survey.* American Institutes for Research, Palo Alto, Calif. Washington, D.C.: U.S. Government Printing Office, 1976.

National Center for Education Statistics. *The Condition of Education, 1976 Edition.* By Mary A. Golladay. Washington, D.C.: U.S. Government Printing Office, 1976.

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National Conference on America's Secondary Schools. *New Dimensions for Educating Youth.* Edited by John Chaffee, Jr. A Bicentennial Conference Report on America's Secondary Schools. Reston, Va.: National Association of Secondary School Principals, 1976.

National Institute of Education. *Catalog of NIE Education Products.* 2 vols. Washington, D.C.: U.S. Government Printing Office, 1975.

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Office of Education. *Annual Report of the Commissioner of Education, Fiscal Year 1974.* Washington, D.C.: U.S. Government Printing Office, 1975.

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_____. *Educational Programs that Work; a Resource of Exemplary Educational Programs Developed by Local School Districts and Approved by the Joint Dissemination Review Panel.* San Francisco, Calif.: Far West Laboratory for Educational Research and Development, 1976.

_____. *An Introduction to Career Education: A Policy Paper of the U.S. Office of Education.* Washington, D.C.: U.S. Government Printing Office, 1975.

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_____. *Psychology and the Handicapped Child.* Washington, D.C.: U.S. Government Printing Office, 1976.

_____. *Public School Finance Programs, 1975-76.* Compiled and edited by Esther O. Tron. Washington, D.C.: U.S. Government Printing Office, 1976.

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U.S. Congress. Committee on Education and Labor. *A Compilation of Federal Education Laws as amended through December 31, 1974.* 94th Congress, 1st Session. Washington, D.C.: U.S. Government Printing Office, 1975.

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[1] Prepared with the assistance of Dr. Sidney Forman, Professor of Education, Teachers College, Columbia University, New York, N.Y.

Table 1.—Enrollment in educational institutions, by level of instruction and by type of control: United States, fall 1974 and fall 1975[1]

[In thousands]

Level of instruction and type of control	Fall 1974	Fall 1975
1	2	3
Total elementary, secondary, and higher education	59,677	60,169
Public	52,132	52,504
Nonpublic	7,545	7,666
Kindergarten-grade 12 (regular and other schools)[2]	50,654	50,438
Regular public schools	45,053	44,838
Regular nonpublic schools	5,300	5,300
Other public schools	241	240
Other nonpublic schools	60	60
Kindergarten-grade 8 (regular and other schools)[2]	35,020	34,645
Regular public schools	30,921	30,545
Regular nonpublic schools	3,900	3,900
Other public schools	174	175
Other nonpublic schools	25	25
Grades 9-12 (regular and other schools)[2]	15,633	15,794
Regular public schools	14,132	14,294
Regular nonpublic schools	1,400	1,400
Other public schools	66	65
Other nonpublic schools	35	35
Higher education (total degree-credit enrollment in universities, colleges, professional schools, teachers colleges, and junior colleges)[3]	9,023	9,731
Public	6,838	7,426
Nonpublic	2,185	2,306
Undergraduate[4]	7,834	8,468
Graduate	1,190	1,263

[1] The 1974 and 1975 figures for regular nonpublic and other elementary and secondary schools are estimates. Surveys of nonpublic elementary and secondary schools have been conducted at less frequent intervals than those of public schools and of institutions of higher education. Consequently, the estimates for nonpublic schools are less reliable than those for other types of institutions. The estimates are derived from the increases expected from population changes combined with the long-range trend in school enrollment rates of the population.

[2] "Regular" schools include schools which are a part of State and local school systems and also most non-profit-making nonpublic elementary and secondary schools, both church-affiliated and nonsectarian. "Other" schools include subcollegiate departments of institutions of higher education, residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

[3] Excludes undergraduate students in occupational programs which are not ordinarily creditable toward a bachelor's degree. There were approximately 1,200,000 of these non-degree-credit students in fall 1974 and 1,453,000 in 1975.

[4] Includes students working toward first-professional degrees, such as M.D., D.D.S., LL.B., and B.D.

NOTE.-Fall enrollment is usually smaller than school-year enrollment, since the latter is a cumulative figure which includes students who enroll at any time during the year. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools; Fall Enrollment in Higher Education;* and estimates of the National Center for Education Statistics.

Table 2.—Percent of the population 5 to 34 years old enrolled in school, by age: United States, October 1947 to October 1975

Year	Total, 5 to 34 years	5 years[1]	6 years[1]	7 to 9 years	10 to 13 years	14 and 15 years	16 and 17 years	18 and 19 years	20 to 24 years	25 to 29 years	30 to 34 years
1	2	3	4	5	6	7	8	9	10	11	12
1947	42.3	53.4	96.2	98.4	98.6	91.6	67.6	24.3	10.2	3.0	1.0
1948	43.1	55.0	96.2	98.3	98.0	92.7	71.2	26.9	9.7	2.6	.9
1949	43.9	55.1	96.2	98.5	98.7	93.5	69.5	25.3	9.2	3.8	1.1
1950	44.2	51.8	97.0	98.9	98.6	94.7	71.3	29.4	9.0	3.0	.9
1951	45.4	53.8	96.0	99.0	99.2	94.8	75.1	26.3	8.3	2.5	.7
1952	46.8	57.8	96.8	98.7	98.9	96.2	73.4	28.7	9.5	2.6	1.2
1953	48.8	58.4	97.7	99.4	99.4	96.5	74.7	31.2	11.1	2.9	1.7
1954	50.0	57.7	96.8	99.2	99.5	95.8	78.0	32.4	11.2	4.1	1.5
1955	50.8	58.1	98.2	99.2	99.2	95.9	77.4	31.5	11.1	4.2	1.6
1956	52.3	58.9	97.0	99.4	99.2	96.9	78.4	35.4	12.8	5.1	1.9
1957	53.6	60.2	97.4	99.5	99.5	97.1	80.5	34.9	14.0	5.5	1.8
1958	54.8	63.8	97.3	99.5	99.5	96.9	80.6	37.6	13.4	5.7	2.2
1959	55.5	62.9	97.5	99.4	99.4	97.5	82.9	36.8	12.7	5.1	2.2
1960	56.4	63.7	98.0	99.6	99.5	97.8	82.6	38.4	13.1	4.9	2.4
1961	56.8	66.3	97.4	99.4	99.3	97.6	83.6	38.0	13.7	4.4	2.0
1962	57.8	66.8	97.9	99.2	99.3	98.0	84.3	41.8	15.6	5.0	2.6
1963	53.5	67.8	97.4	99.4	99.3	98.4	87.1	40.9	17.3	4.9	2.5
1964	58.7	68.5	98.2	99.0	99.0	98.6	87.7	41.6	16.8	5.2	2.6
1965	59.7	70.1	98.7	99.3	99.4	98.9	87.4	46.3	19.0	6.1	3.2
1966	60.0	72.8	97.6	99.3	99.3	98.6	88.5	47.2	19.9	6.5	2.7
1967	60.2	75.0	98.4	99.4	99.1	98.2	88.8	47.6	22.0	6.6	4.0
1968	60.0	74.9	98.3	99.1	99.1	98.0	90.2	50.4	21.4	7.0	3.9
1969	60.0	76.2	98.2	99.3	99.1	98.1	89.7	50.2	23.0	7.9	4.8
1970	58.9	77.7	98.4	99.3	99.2	98.1	90.0	47.7	21.5	7.5	4.2
1971	58.5	82.5	98.4	99.1	99.2	98.6	90.2	49.2	21.9	8.0	4.9
1972	56.8	83.5	98.1	99.0	99.3	97.6	88.9	46.3	21.6	8.6	4.6
1973	55.4	84.1	98.5	99.1	99.2	97.5	88.3	42.9	20.8	8.5	4.5
1974	55.2	87.0	98.7	99.1	99.5	97.9	87.9	43.1	21.4	9.6	5.7
1975	55.0	87.2	99.0	99.3	99.3	98.2	89.0	46.9	22.4	10.1	6.6

[1] Includes children enrolled in kindergarten, but excludes those enrolled in nursery schools.

NOTE.—Data are based upon sample surveys of the civilian noninstitutional population.

SOURCES: (1) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20. (2) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, reports on *Preprimary Enrollment*.

Table 3.—Enrollment in grades 9-12 in public and nonpublic schools compared with population 14-17 years of age: United States, 1889-90 to fall 1975

School year	Enrollment, grades 9-12[1]			Population 14-17 years of age[2]	Total number enrolled per 100 persons 14-17 years of age
	All schools	Public schools	Nonpublic schools		
1	2	3	4	5	6
1889-90	359,949	[3] 202,963	[3] 94,931	5,354,653	6.7
1899-1900	699,403	[3] 519,251	[3] 110,797	6,152,231	11.4
1909-10	1,115,398	[3] 915,061	[3] 117,400	7,220,298	15.4
1919-20	2,500,176	[3] 2,200,389	[3] 213,920	7,735,841	32.3
1929-30	4,804,255	[3] 4,399,422	[3, 4] 341,158	9,341,221	51.4
1939-40	7,123,009	6,635,337	487,672	9,720,419	73.3
1941-42	6,933,265	6,420,544	512,721	9,749,000	71.1
1943-44	6,030,617	5,584,656	445,961	9,449,000	63.8
1945-46	6,237,133	5,664,528	572,605	9,056,000	68.9
1947-48	6,305,168	5,675,937	629,231	8,841,000	71.3
1949-50	6,453,009	5,757,810	695,199	8,404,768	76.8
1951-52	6,596,351	5,917,384	678,967	8,516,000	77.5
1953-54	7,108,973	6,330,565	778,408	8,861,000	80.2
1955-56	7,774,975	6,917,790	857,185	9,207,000	84.4
1957-58	8,869,186	7,905,469	963,717	10,139,000	87.5
1959-60	9,599,810	8,531,454	1,068,356	11,154,879	86.1
1961-62	10,768,972	9,616,755	1,152,217	12,046,000	89.4
Fall 1963	12,255,496	10,935,536	1,319,960	13,492,000	90.8
Fall 1965	13,020,823	11,657,808	1,363,015	14,145,000	92.1
Fall 1969	14,418,301	13,084,301	[5] 1,334,000	15,550,000	92.7
Fall 1971	15,226,000	13,886,000	[5] 1,340,000	16,279,000	93.5
Fall 1973	15,476,526	14,141,526	[5] 1,335,000	16,745,000	92.4
Fall 1975[6]	15,795,000	14,360,000	[5] 1,435,000	16,941,000	93.2

[1] Unless otherwise indicated, includes enrollment in subcollegiate departments of institutions of higher education and in residential schools for exceptional children. Beginning in 1949-50, also includes Federal schools.
[2] Includes all persons residing in the United States, but excludes Armed Forces overseas. Data from the decennial censuses have been used when appropriate. Other figures are Bureau of the Census estimates as of July 1 preceding the opening of the school year.
[3] Excludes enrollment in subcollegiate departments of institutions of higher education and in residential schools for exceptional children.
[4] Data for 1927-28.
[5] Estimated.
[6] Preliminary data.

NOTE.—Beginning in 1959-60, includes Alaska and Hawaii.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of State School Systems; Statistics of Public Elementary and Secondary Day Schools; Statistics of Nonpublic Elementary and Secondary Schools;* and unpublished data.

Table 4.—Degree-credit enrollment in institutions of higher education compared with population aged 18–24: United States, fall 1950 to fall 1975

Year	Population 18-24 years of age[1]	Enrollment	Number enrolled per 100 persons 18-24 years of age
1	2	3	4
1950	16,076,000	2,286,500	14.2
1951	15,781,000	2,107,109	13.4
1952	15,473,000	2,139,156	13.8
1953	15,356,000	2,235,977	14.6
1954	15,103,000	2,452,466	16.2
1955	14,968,000	2,660,429	17.8
1956	14,980,000	2,927,367	19.5
1957	15,095,000	3,047,373	20.2
1958	15,307,000	3,236,414	21.2
1959	15,677,000	3,377,273	21.5
1960	16,128,000	3,582,726	22.2
1961	17,004,000	3,860,643	22.7
1962	17,688,000	4,174,936	23.6
1963	18,268,000	4,494,626	24.6
1964	18,783,000	4,950,173	26.4
1965	20,293,000	5,526,325	27.2
1966	21,376,000	[2] 5,928,000	27.7
1967	22,327,000	[2] 6,406,000	28.7
1968	22,883,000	6,928,115	30.3
1969	23,723,000	7,484,073	31.5
1970	24,687,000	7,920,149	32.1
1971	25,779,000	8,116,103	31.5
1972	25,913,000	8,265,057	31.9
1973	26,397,000	8,518,150	32.3
1974	26,915,000	9,023,446	33.5
1975	27,623,000	9,731,431	35.2

[1] These Bureau of the Census estimates are as of July 1 preceding the opening of the academic year. They include Armed Forces overseas.
[2] Estimated.

NOTE.—Data are for 50 States and the District of Columbia. Beginning in 1953, enrollment figures include extension students.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.* (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports,* Series P-25, Nos. 311, 519, and 614.

Table 5.—Enrollment in federally aided vocational education classes, by type of program: United States and outlying areas, 1920 to 1975

Fiscal year	Type of program								
	Total	Agriculture	Distributive occupations	Home economics	Trades and industry	Health occupations	Technical education	Office occupations	Other programs
1	2	3	4	5	6	7	8	9	10
1920	265,058	31,301	.....	48,938	184,819	.....	.....	.....	.....
1930	981,882	188,311	.....	174,967	618,604	.....	.....	.....	.....
1940	2,290,741	584,133	129,433	818,766	758,409	.....	.....	.....	.....
1942	2,624,786	605,099	215,049	954,041	850,597	.....	.....	.....	.....
1944	2,001,153	469,959	181,509	806,605	543,080	.....	.....	.....	.....
1946	2,227,663	510,331	174,672	911,816	630,844	.....	.....	.....	.....
1948	2,836,121	640,791	292,936	1,139,766	762,628	.....	.....	.....	.....
1950	3,364,613	764,975	364,670	1,430,366	804,602	.....	.....	.....	.....
1952	3,165,988	746,402	234,984	1,391,389	793,213	.....	.....	.....	.....
1954	3,164,851	737,502	220,619	1,380,147	826,583	.....	.....	.....	.....
1956	3,413,159	785,599	257,025	1,486,816	883,719	.....	.....	.....	.....
1958	3,629,339	775,892	282,558	1,559,822	983,644	27,423	.....	.....	.....
1960	3,768,149	796,237	303,784	1,588,109	938,490	40,250	101,279	.....	.....
1962	4,072,677	822,664	321,065	1,725,660	1,005,383	48,985	148,920	.....	.....
1964	4,566,390	860,605	334,126	2,022,138	1,069,274	59,006	221,241	.....	.....
1966	6,070,059	907,354	420,426	1,897,670	1,269,051	83,677	253,838	1,238,043	.....
1968	7,533,936	851,158	574,785	2,283,338	1,628,542	140,987	269,832	1,735,997	49,297
1970	8,793,960	852,983	529,365	2,570,410	1,906,133	198,044	271,730	2,111,160	354,135
1972	11,710,767	896,460	640,423	3,445,698	2,397,968	336,652	337,069	2,351,878	1,304,619
1974	13,794,512	976,319	832,905	3,702,684	2,824,317	504,913	392,887	2,757,464	1,803,023
1975	15,485,828	1,012,595	873,224	3,746,540	3,016,509	616,638	447,336	2,951,065	2,821,921

SOURCES: U.S. Department of Health, Education, and Welfare, Office of Education, reports on *Vocational and Technical Education;* and *Summary Data, Vocational Education.*

Table 6.—Estimated number of classroom teachers in elementary and secondary schools, and total instructional staff for resident courses in institutions of higher education: United States, fall 1974 and fall 1975[1]

[Full-time and part-time teachers and staff]

Level of instruction and type of control	Fall 1974	Fall 1975
1	2	3
Total elementary, secondary, and higher education	3,067,000	3,155,000
Public	2,630,000	2,703,000
Nonpublic	437,000	452,000
Elementary and secondary classroom teachers in regular and other schools[2]	2,445,000	2,486,000
Public	2,181,000	2,219,000
Nonpublic	264,000	266,000
Elementary classroom teachers in regular and other schools[2]	1,352,000	1,368,000
Public	1,179,000	1,195,000
Nonpublic	173,000	173,000
Secondary classroom teachers in regular and other schools[2]	1,093,000	1,117,000
Public	1,002,000	1,024,000
Nonpublic	91,000	93,000
Higher education instructional staff for resident courses[3]	622,000	670,000
Public	449,000	484,000
Nonpublic	173,000	186,000

[1] The figures for nonpublic and other elementary and secondary schools and for institutions of higher education, in 1974 and 1975, are estimates. Data for nonpublic elementary and secondary schools are not as complete as those for public schools; consequently, the estimates for nonpublic schools are not as reliable as those for public schools or for higher education. The estimates are derived from enrollment changes combined with the long-term trend in pupil-teacher ratios.

Whether grades 7 and 8 are counted as "elementary" or "secondary" depends on the structure of the local school system.

[2] The figures include elementary and secondary classroom teachers in regular public and nonpublic schools and other schools, such as Federal schools for Indians, federally operated schools on posts, subcollegiate departments of colleges, and residential schools for exceptional children. For 1974 and 1975, the numbers of such teachers are estimated as 12,000 in public and 2,000 in nonpublic elementary schools; 4,000 in public and 3,000 in nonpublic secondary schools.

[3] Includes full-time and part-time staff with rank of instructor or above, and junior staff, such as graduate assistants, for instruction in resident courses.

SOURCES: Surveys and estimates of the National Center for Education Statistics, U.S. Department of Health, Education, and Welfare.

Table 7.—Selected statistics for public elementary and secondary schools: United States, fall 1970 and fall 1975[1]

Item	Fall 1970	Fall 1975	Percentage change, 1970 to 1975
1	2	3	4
Local school districts			
Total	17,995	16,376	-9.0
Operating	17,181	16,013	-6.8
Nonoperating	814	363	-55.4
Number of schools[2]			
Elementary only	64,539	61,759	-4.3
Secondary only	23,972	23,837	-0.6
Combined elementary and secondary	2,310	1,860	-19.5
Enrollment			
Total	45,909,088	44,838,490	-2.3
Elementary	27,501,001	25,692,214	-6.6
Secondary	18,408,087	19,146,276	4.0
Percent of total enrollment in elementary schools	59.9	57.3	.....
Percent of total enrollment in secondary schools	40.1	42.7	.....
Classroom teachers			
Total, full-time and part-time	2,055,218	[3] 2,203,089	7.2
Elementary schools	1,127,962	[3] 1,183,059	4.9
Secondary schools	927,256	[3] 1,020,030	10.0
Percent of total teachers in elementary schools	54.9	[3] 53.7	.....
Percent of total teachers in secondary schools	45.1	[3] 46.3	.....
Pupil-teacher ratio			
All schools	22.3	[3] 20.4	.....
Elementary schools	24.3	[3] 21.7	.....
Secondary schools	19.8	[3] 18.8	.....
Public high school graduates[2]			
Total graduates of regular day school programs	2,588,639	2,823,023	9.1
Boys	1,285,518	1,389,353	8.1
Girls	1,303,121	1,433,670	10.0
Other programs	36,585	36,392	-0.5
High school equivalency certificates	141,793	225,585	59.1

[1] Whether grades 7 and 8 are counted as "elementary" or "secondary" depends on the structure of the local school system.
[2] Data for previous school year.
[3] Estimated.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools, Fall 1970* and *Fall 1975*.

Table 8.—Number of high school graduates compared with population 17 years of age: United States, 1869-70 to 1974-75

School year	Population 17 years old[1]	High school graduates[2]			Number graduated per 100 persons 17 years of age
		Total	Boys	Girls	
1	2	3	4	5	6
1869-70	815,000	16,000	7,064	8,936	2.0
1879-80	946,026	23,634	10,605	13,029	2.5
1889-90	1,259,177	43,731	18,549	25,182	3.5
1899-1900	1,489,146	94,883	38,075	56,808	6.2
1909-10	1,786,240	156,429	63,676	92,753	8.8
1919-20	1,855,173	311,266	123,684	187,582	16.8
1929-30	2,295,822	666,904	300,376	366,528	29.0
1939-40	2,403,074	1,221,475	578,718	642,757	50.8
1941-42	2,425,574	1,242,375	576,717	665,658	51.3
1943-44	2,410,339	1,019,233	423,971	595,262	42.3
1945-46	2,254,738	1,080,033	466,926	613,107	47.9
1947-48	2,202,927	1,189,909	562,863	627,046	54.0
1949-50	2,034,450	1,199,700	570,700	629,000	59.0
1951-52	2,040,800	1,196,500	569,200	627,300	58.6
1953-54	2,128,600	1,276,100	612,500	663,600	60.0
1955-56	2,270,000	1,414,800	679,500	735,300	62.3
1957-58	2,324,000	1,505,900	725,500	780,400	64.8
1959-60	2,862,005	1,864,000	898,000	966,000	65.1
1961-62	2,768,000	1,925,000	941,000	984,000	69.5
1963-64	3,001,000	2,290,000	1,121,000	1,169,000	76.3
1965-66	3,515,000	2,632,000	1,308,000	1,324,000	74.9
1967-68	3,521,000	2,702,000	1,341,000	1,361,000	76.7
1969-70	3,825,343	2,896,000	1,433,000	1,463,000	75.7
1971-72	3,957,000	3,006,000	1,490,000	1,516,000	76.0
1973-74[3]	4,096,000	3,077,000	1,513,000	1,564,000	75.1
1974-75	4,210,000	3,140,000	1,541,000	1,599,000	74.6

[1] Data from Bureau of the Census.
[2] Includes graduates of public and nonpublic schools.
[3] Revised since originally published.

NOTE.—Beginning in 1959-60, includes Alaska and Hawaii.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of State School Systems; Statistics of Public Elementary and Secondary Day Schools, Fall 1975; Statistics of Nonpublic Elementary and Secondary Schools;* and unpublished data.

Table 9.—Earned degrees conferred by institutions of higher education: United States, 1869-70 to 1974-75

Year	Earned degrees conferred			
	All degrees	Bachelor's and first-professional	Master's except first-professional[1]	Doctor's
1	2	3	4	5
1869-70	9,372	9,371	0	1
1879-80	13,829	12,896	879	54
1889-90	16,703	15,539	1,015	149
1899-1900	29,375	27,410	1,583	382
1909-10	39,755	37,199	2,113	443
1919-20	53,516	48,622	4,279	615
1929-30	139,752	122,484	14,969	2,299
1939-40	216,521	186,500	26,731	3,290
1941-42	213,491	185,346	24,648	3,497
1943-44	141,582	125,863	13,414	2,305
1945-46	157,349	136,174	19,209	1,966
1947-48	317,607	271,019	42,400	4,188
1949-50	496,661	432,058	58,183	6,420
1951-52	401,203	329,986	63,534	7,683
1953-54	356,608	290,825	56,788	8,995
1955-56	376,973	308,812	59,258	8,903
1957-58	436,979	362,554	65,487	8,938
1959-60	476,704	392,440	74,435	9,829
1961-62	514,323	417,846	84,855	11,622
1963-64	614,194	498,654	101,050	14,490
1965-66	709,832	551,040	140,555	18,237
1967-68	866,548	666,710	176,749	23,089
1969-70	1,065,391	827,234	208,291	29,866
1971-72	1,215,680	930,684	251,633	33,363
1973-74	1,310,441	999,592	277,033	33,816
1974-75	1,305,382	978,849	292,450	34,083

[1] Beginning in 1965-66, includes all master's degrees.

NOTE.—Beginning in 1959-60, includes Alaska and Hawaii.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Biennial Survey of Education in the United States; Earned Degrees Conferred;* and unpublished data.

Table 10.—Earned degrees conferred by institutions of higher education, by field of study and by level: United States, 1974-75

Field of study	Earned degrees conferred			
	Bachelor's degrees (requiring 4 or 5 years)	First professional degrees (requiring at least 6 years)	Master's degrees	Doctor's degrees (Ph.D., Ed.D., etc.)
1	2	3	4	5
All fields	922,933	55,916	292,450	34,083
Agriculture and natural resources	17,528	.....	3,067	991
Architecture and environmental design	8,226	.....	2,938	69
Area studies	3,035	.....	1,134	165
Biological sciences	51,741	.....	6,550	3,384
Business and management	133,822	.....	36,364	1,011
Communications	19,248	.....	2,794	165
Computer and information sciences	5,033	.....	2,299	213
Education	166,969	.....	119,778	7,443
Engineering	46,852	.....	15,348	3,108
Fine and applied arts	40,782	.....	8,362	649
Foreign languages	17,606	.....	3,807	157
Health professions	49,090	20,443	10,692	618
Home economics	16,772	.....	1,901	156
Law	436	29,296	1,245	21
Letters[1]	57,577	.....	11,861	2,498
Library science	1,069	.....	8,091	56
Mathematics	18,181	.....	4,327	975
Military sciences	340	.....	.....	.....
Physical sciences	20,778	.....	5,807	3,626
Psychology	50,988	.....	7,066	2,442
Public affairs and services	28,160	.....	15,299	285
Social sciences	135,674	.....	16,924	4,209
Theology	4,809	5,095	3,228	872
Interdisciplinary and other fields	28,217	1,082	3,568	270

[1] Includes general English; English literature; Comparative literature; Classics; Linguistics; Speech, debate, and forensic science; Creative writing; Teaching of English as a foreign language; Philosophy; and Religious studies.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Earned Degrees Conferred, 1974-75.*

Table 11.—Estimated retention rates,[1] 5th grade through college entrance, in public and nonpublic schools: United States, 1924-32 to 1967-75

School year pupils entered 5th grade	Retention per 1,000 pupils who entered 5th grade								High school graduation		First-time college students
	5th grade	6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade	Number	Year of graduation	
1	2	3	4	5	6	7	8	9	10	11	12
1924-25	1,000	911	798	741	612	470	384	344	302	1932	118
1926-27	1,000	919	824	754	677	552	453	400	333	1934	129
1928-29	1,000	939	847	805	736	624	498	432	378	1936	137
1930-31	1,000	943	872	824	770	652	529	463	417	1938	148
1932-33	1,000	935	889	831	786	664	570	510	455	1940	160
1934-35	1,000	953	892	842	803	711	610	512	467	1942	129
1936-37	1,000	954	895	849	839	704	554	425	393	1944	121
1938-39	1,000	955	908	853	796	655	532	444	419	1946	(2)
1940-41	1,000	968	910	836	781	697	566	507	481	1948	(2)
1942-43	1,000	954	909	847	807	713	604	539	505	1950	205
1944-45	1,000	952	929	858	848	748	650	549	522	1952	234
1946-47	1,000	954	945	919	872	775	641	583	553	1954	283
1948-49	1,000	984	956	929	863	795	706	619	581	1956	301
1950-51	1,000	981	968	921	886	809	709	632	582	1958	308
1952-53	1,000	974	965	936	904	835	746	667	621	1960	329
1954-55	1,000	980	979	948	915	855	759	684	642	1962	343
1956-57	1,000	985	984	948	930	871	790	728	676	1964	362
Fall 1958	1,000	983	979	961	946	908	842	761	732	1966	384
Fall 1960	1,000	980	973	967	952	913	858	787	749	1968	452
Fall 1962	1,000	987	977	967	959	928	860	790	750	1970	461
Fall 1964	1,000	988	985	976	975	942	865	791	748	1972	433
Fall 1966	1,000	989	986	985	985	959	871	783	744	1974	[3] 448
Fall 1967	1,000	992	988	984	984	956	870	775	743	1975	452

[1] Rates for the 5th grade through high school graduation are based on enrollments in successive grades in successive years in public elementary and secondary schools and are adjusted to include estimates for nonpublic schools. Rates for first-time college enrollment include full-time and part-time students enrolled in programs creditable toward a bachelor's degree.
[2] Data not available.
[3] Revised since originally published.

NOTE.—Beginning with the class in the 5th grade in 1958, data are based on fall enrollment and exclude ungraded pupils. The net effect of these changes is to increase high school graduation and college entrance rates slightly.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Biennial Survey of Education in the United States; Statistics of State School Systems; Fall Statistics of Public Elementary and Secondary Day Schools;* and unpublished data.

Table 12.—Level of school completed by persons age 25 and over and 25 to 29, by race: United States, 1910 to 1976

Race, age, and date	Percent, by level of school completed			Median school years completed
	Less than 5 years of elementary school	4 years of high school or more	4 or more years of college	
1	2	3	4	5
All races				
25 and over:				
1910[1]	23.8	13.5	2.7	8.1
1920[1]	22.0	16.4	3.3	8.2
1930[1]	17.5	19.1	3.9	8.4
April 1940	13.5	24.1	4.6	8.6
April 1950	10.8	33.4	6.0	9.3
April 1960	8.3	41.1	7.7	10.5
March 1970	5.3	55.2	11.0	12.2
March 1974	4.4	61.2	13.3	12.3
March 1976	3.9	64.1	14.7	12.4
25 to 29:				
April 1940	5.9	37.8	5.8	10.4
April 1950	4.6	51.7	7.7	12.1
April 1960	2.8	60.7	11.1	12.3
March 1970	1.1	75.4	16.4	12.6
March 1974	1.2	81.9	20.7	12.8
March 1976	0.8	84.7	23.7	12.9
White				
25 and over:				
April 1940	10.9	26.1	4.9	8.7
April 1950	8.7	35.5	6.4	9.7
April 1960	6.7	43.2	8.1	10.8
March 1970	4.2	57.4	11.6	12.2
March 1974	3.5	63.3	14.0	12.4
March 1976	3.0	66.1	15.4	12.4
25 to 29:				
1920[1]	12.9	22.0	4.5	8.5
April 1940	3.4	41.2	6.4	10.7
April 1950	3.2	56.2	8.1	12.2
April 1960	2.2	63.7	11.8	12.3
March 1970	.9	77.8	17.3	12.6
March 1974	1.1	83.4	22.0	12.8
March 1976	0.8	85.9	24.6	12.9
Black and other races				
25 and over:				
April 1940	41.8	7.7	1.3	5.7
April 1950	31.4	13.4	2.2	6.9
April 1960	23.5	21.7	3.5	8.2
March 1970	14.7	36.1	6.1	10.1
March 1974	12.2	44.3	8.0	11.1
March 1976	10.7	47.8	9.6	11.6
25 to 29:				
1920[1]	44.6	6.3	1.2	5.4
April 1940	26.7	12.1	1.6	7.1
April 1950	15.4	23.4	2.8	8.7
April 1960	7.2	38.6	5.4	10.8
March 1970	2.2	58.4	10.0	12.2
March 1974	1.8	71.3	11.0	12.5
March 1976	0.9	76.1	17.5	12.6

[1] Estimates based on retrojection of 1940 census data on education by age.

NOTE.—Prior to 1950, data exclude Alaska and Hawaii. Data for 1974 and 1976 are for the noninstitutional population.

SOURCES: U.S. Department of Commerce, Bureau of the Census, *1960 Census of Population*, Vol. 1, Part 1; *Current Population Reports*, Series P-20; Series P-19, No. 4; and 1960 Census Monograph, *Education of the American Population*, by John K. Folger and Charles B. Nam.

Table 13.—Percent of illiteracy[1] in the population: United States, 1870 to 1969

Year	Percent illiterate[2]	Year	Percent illiterate[2]
1	2	1	2
1870	20.0	1930	4.3
1880	17.0	1940	[3] 2.9
1890	13.3	1947	2.7
1900	10.7	1952	2.5
1910	7.7	1959	2.2
1920	6.0	1969	1.0

[1] Illiteracy is defined as the inability to read or write a simple message either in English or in any other language.
[2] Percentages refer to the population 10 years old and over from 1870 to 1940 and to the population 14 years old and over from 1947 to 1969.
[3] Estimated.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20, No. 217.

Table 14.—Revenue receipts of public elementary and secondary schools from Federal, State, and local sources: United States, 1919-20 to 1975-76

School year	Total	Federal	State	Local (including intermediate)[1]	School year	Total	Federal	State	Local (including intermediate)[1]
1	2	3	4	5	1	2	3	4	5
	AMOUNT IN THOUSANDS OF DOLLARS					PERCENTAGE DISTRIBUTION			
1919-20	$970,120	$2,475	$160,088	$807,561	1919-20	100.0	0.3	16.5	83.2
1929-30	2,088,557	7,334	353,670	1,727,553	1929-30	100.0	.4	16.9	82.7
1939-40	2,260,527	39,810	684,354	1,536,363	1939-40	100.0	1.8	30.3	68.0
1941-42	2,416,580	34,305	759,993	1,622,281	1941-42	100.0	1.4	31.5	67.1
1943-44	2,604,322	35,886	859,183	1,709,253	1943-44	100.0	1.4	33.0	65.6
1945-46	3,059,845	41,378	1,062,057	1,956,409	1945-46	100.0	1.4	34.7	63.8
1947-48	4,311,534	120,270	1,676,362	2,514,902	1947-48	100.0	2.8	38.9	58.3
1949-50	5,437,044	155,848	2,165,689	3,115,507	1949-50	100.0	2.9	39.8	57.3
1951-52	6,423,816	227,711	2,478,596	3,717,507	1951-52	100.0	3.5	38.6	57.8
1953-54	7,866,852	355,237	2,944,103	4,567,512	1953-54	100.0	4.5	37.4	58.1
1955-56	9,686,677	441,442	3,828,886	5,416,350	1955-56	100.0	4.6	39.5	55.9
1957-58	12,181,513	486,484	4,800,368	6,894,661	1957-58	100.0	4.0	39.4	56.6
1959-60	14,746,618	651,639	5,768,047	8,326,932	1959-60	100.0	4.4	39.1	56.5
1961-62	17,527,707	760,975	6,789,190	9,977,542	1961-62	100.0	4.3	38.7	56.9
1963-64	20,544,182	896,956	8,078,014	11,569,213	1963-64	100.0	4.4	39.3	56.3
1965-66	25,356,858	1,996,954	9,920,219	13,439,686	1965-66	100.0	7.9	39.1	53.0
1967-68	31,903,064	2,806,469	12,275,536	16,821,063	1967-68	100.0	8.8	38.5	52.7
1969-70	40,266,923	3,219,557	16,062,776	20,984,589	1969-70	100.0	8.0	39.9	52.1
1971-72	50,003,645	4,467,969	19,133,256	26,402,420	1971-72	100.0	8.9	38.3	52.8
1973-74	58,230,892	4,930,351	24,113,409	29,187,132	1973-74	100.0	8.5	41.4	50.1
1975-76[2]	67,136,937	5,345,912	29,321,594	32,469,431	1975-76[2]	100.0	8.0	43.7	48.4

[1] Includes a relatively small amount from nongovernmental sources (gifts and tuition and transportation fees from patrons). These sources accounted for 0.4 percent of total revenue receipts in 1967-68.
[2] Estimated.

NOTE.—Beginning in 1959-60, includes Alaska and Hawaii. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of State School Systems*, and *Statistics of Public Elementary and Secondary Day Schools, Fall 1975.*

Table 15.—Federal funds for education and related activities: Fiscal years 1975 and 1976

Level and type of support	1975	1976[1]	Percentage change, 1975 to 1976
1	2	3	4
Federal funds supporting education in educational institutions			
Total grants and loans	$17,589,325,000	$20,137,337,000	14.5
Grants, total	17,109,675,000	19,670,065,000	15.0
Elementary-secondary education	4,998,055,000	5,079,389,000	1.6
Higher education	7,995,305,000	9,700,094,000	21.3
Vocational-technical and continuing education	4,116,315,000	4,890,582,000	18.8
Loans, total (higher education)	479,650,000	467,272,000	-2.6
Other Federal funds for education and related activities			
Total	5,783,952,000	6,488,773,000	12.2
Applied research and development	1,970,056,000	2,000,401,000	1.5
School lunch and milk programs	1,811,784,000	2,333,118,000	27.4
Training of Federal personnel	1,014,986,000	1,108,388,000	9.2
Library services	227,645,000	247,508,000	8.7
International education	93,474,000	104,207,000	11.5
Other[2]	646,007,000	695,151,000	7.6

[1] Estimated.
[2] Includes agricultural extension services, educational television facilities, education in Federal correctional institutions, value of surplus property transferred, and any additional Federal programs.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Digest of Education Statistics, 1976.*

Table 16.—Total and per-pupil expenditures of public elementary and secondary schools: United States, 1919-20 to 1975-76

School year	Expenditures for public schools (in thousands of dollars)					Expenditure per pupil in average daily attendance	
	Total	Current expenditures for day schools	Current expenditures for other programs[1]	Capital Outlay	Interest	Total[2]	Current[3]
1	2	3	4	5	6	7	8
1919-20	$1,036,151	$861,120	$3,277	$153,543	$18,212	$64	$54
1929-30	2,316,790	1,843,552	9,825	370,878	92,536	108	87
1939-40	2,344,049	1,941,799	13,367	257,974	130,909	106	88
1949-50	5,837,643	4,687,274	35,614	1,014,176	100,578	259	209
1959-60	15,613,255	12,329,389	132,566	2,661,786	489,514	472	375
1961-62	18,373,339	14,729,270	194,093	2,862,153	587,823	530	419
1963-64	21,324,993	17,218,446	427,528	2,977,976	701,044	559	460
1965-66	26,248,026	21,053,280	648,304	3,754,862	791,580	654	537
1967-68	32,977,182	26,877,162	866,419	4,255,791	977,810	786	658
1969-70	40,683,428	34,217,773	635,803	4,659,072	1,170,782	955	816
1971-72	48,050,283	41,817,782	[4] 395,319	4,458,949	1,378,236	1,128	990
1973-74	56,970,355	50,024,638	[4] 453,207	4,978,976	1,513,534	1,364	1,207
1975-76[5]	67,102,569	57,436,029	1,713,704	5,982,539	1,970,297	1,580	1,388

[1] Includes expenditures for adult education, summer schools, community colleges, and community services (when separately reported).
[2] Includes current expenditures for day schools, capital outlay, and interest on school debt.
[3] Includes day school expenditures only; excludes current expenditures for other programs.
[4] Excludes data for adult education and community colleges.
[5] Estimated.

NOTE.—Beginning in 1959-60, includes Alaska and Hawaii. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Statistics of State School Systems;* and *Statistics of Public Elementary and Secondary Day Schools, Fall 1975.*

Table 17.—Gross national product related to total expenditures[1] for education: United States, 1929-30 to 1975-76

Calendar year	Gross national product (in millions)	School year	Expenditures for education	
			Total (in thousands)	As a percent of gross national product
1	2	3	4	5
1929	$103,095	1929-30	$3,233,601	3.1
1931	75,820	1931-32	2,966,464	3.9
1933	55,601	1933-34	2,294,896	4.1
1935	72,247	1935-36	2,649,914	3.7
1937	90,446	1937-38	3,014,074	3.3
1939	90,494	1939-40	3,199,593	3.5
1941	124,540	1941-42	3,203,548	2.6
1943	191,592	1943-44	3,522,007	1.8
1945	212,010	1945-46	4,167,597	2.0
1947	232,757	1947-48	6,574,379	2.8
1949	258,023	1949-50	8,795,635	3.4
1951	330,183	1951-52	11,312,446	3.4
1953	$366,129	1953-54	$13,949,876	3.8
1955	399,266	1955-56	16,811,651	4.2
1957	442,755	1957-58	21,119,565	4.8
1959	486,465	1959-60	24,722,464	5.1
1961	523,292	1961-62	29,366,305	5.6
1963	594,738	1963-64	36,010,210	6.1
1965	688,110	1965-66	45,397,713	6.6
1967	796,312	1967-68	57,213,374	7.2
1969	935,541	1969-70	[2] 70,400,980	7.5
1971	1,063,436	1971-72	[2] 83,220,945	7.8
1973	1,306,554	1973-74	98,512,847	7.5
1975	1,516,338	1975-76	[3] 120,100,000	7.9

[1] Includes expenditures of public and nonpublic schools at all levels of education (elementary, secondary, and higher).
[2] Revised since originally published.
[3] Estimated.

NOTE.—Beginning with 1959-60 school year, includes Alaska and Hawaii.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics *Statistics of State School Systems; Financial Statistics of Institutions of Higher Education;* and unpublished data. (2) U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* August 1965, January 1976, and July 1976.

Table 18.—Expenditures of Federal, State, and local funds for vocational education: United States and outlying areas, 1920 to 1975

[In thousands of dollars]

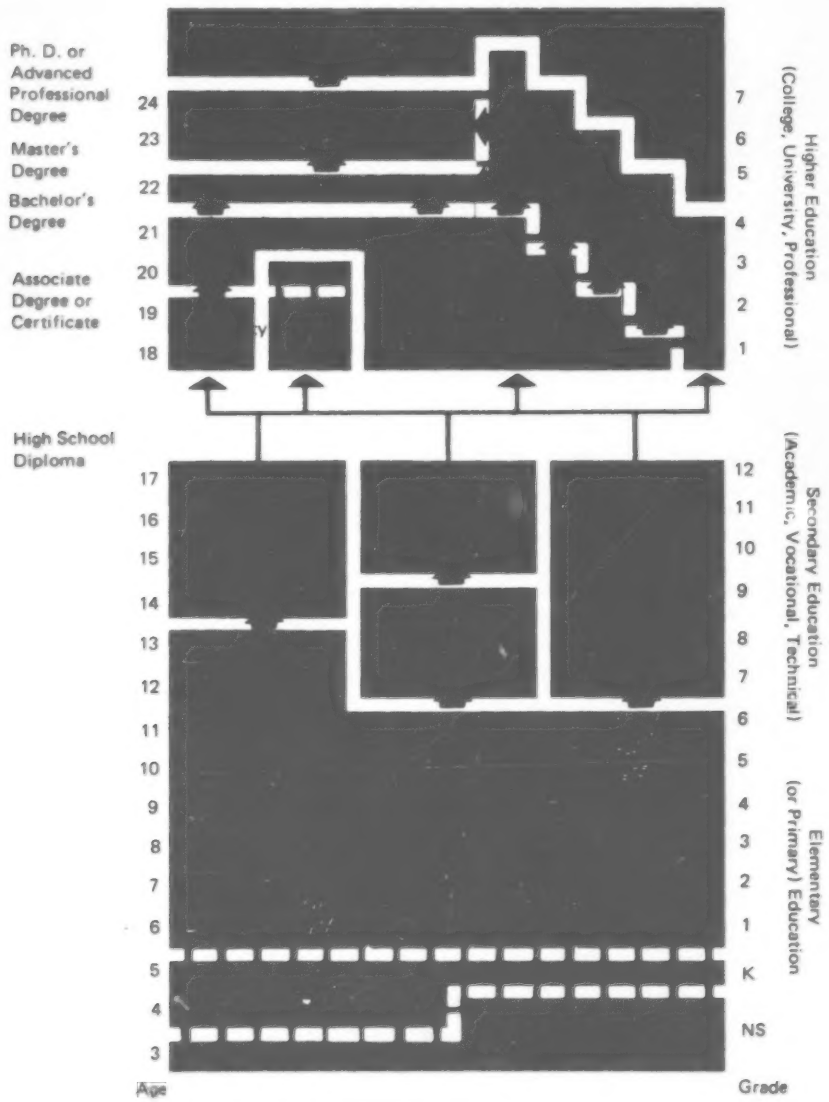
Fiscal year	Total	Federal	State	Local
1	2	3	4	5
1920	$8,535	$2,477	$2,670	$3,388
1930	29,909	7,404	8,233	14,272
1940	55,081	20,004	11,737	23,340
1942	59,023	20,758	14,045	24,220
1944	64,299	19,958	15,016	29,325
1946	72,807	20,628	18,538	33,641
1948	103,339	26,200	25,834	51,305
1950	128,717	26,623	40,534	61,561
1952	146,466	25,863	47,818	72,784
1954	151,289	25,419	54,550	71,320
1956	175,886	33,180	61,821	80,884
1958	209,748	38,733	72,305	98,710
1960	238,812	45,313	82,466	111,033
1962	283,948	51,438	104,264	128,246
1964	332,785	55,027	124,975	152,784
1966	799,895	233,794	216,583	349,518
1968	1,192,863	262,384	400,362	530,117
1970	1,841,846	300,046	(1)	[1] 1,541,801
1972	2,660,759	466,029	(1)	[1] 2,194,730
1974	3,433,820	468,197	(1)	[1] 2,965,623
1975	4,037,277	536,140	(1)	[1] 3,501,137

[1] State funds are included with local funds in column 5.

NOTE.—Because of rounding, details may not add to totals.

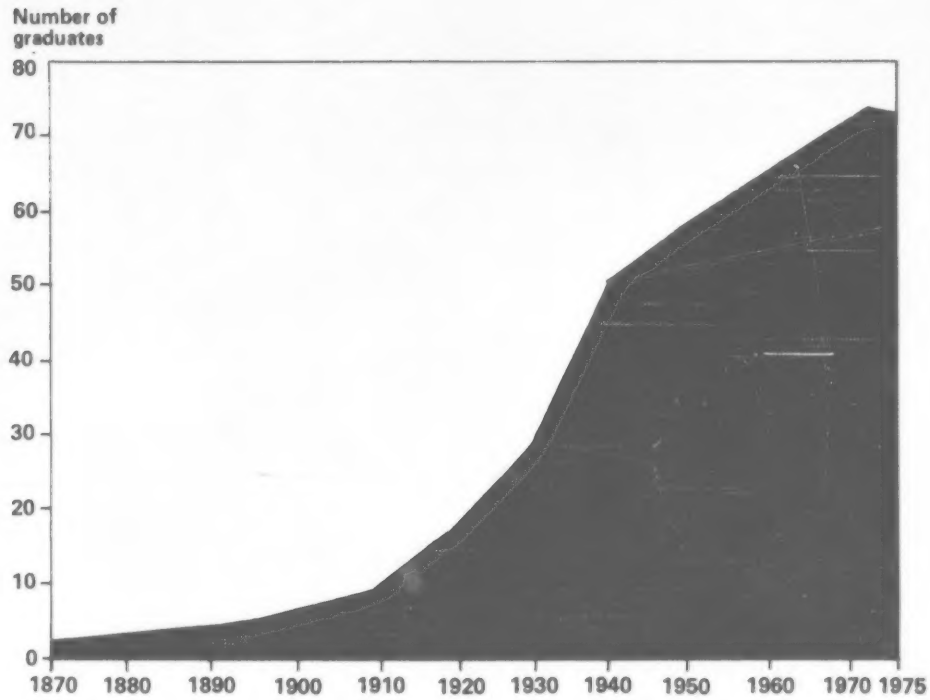
SOURCES: U.S. Department of Health, Education, and Welfare, Office of Education, reports on *Vocational and Technical Education;* and *Summary Data, Vocational Education.*

Figure 1.--The structure of education in the United States



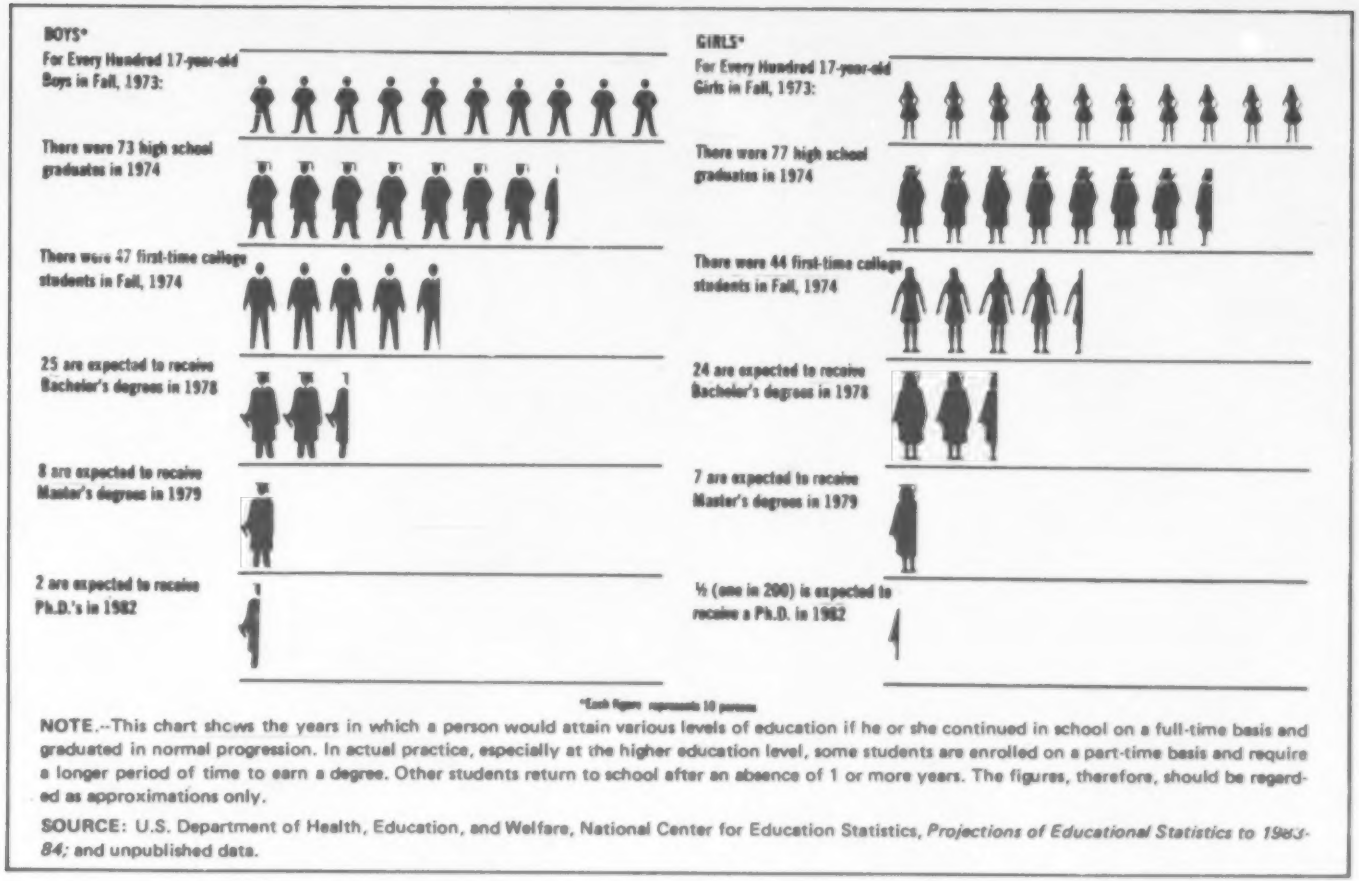
NOTE.--Adult education programs, while not separately delineated above, may provide instruction at the elementary, secondary, or higher education level.

Figure 2.--Number of high school graduates for each 100 persons 17 years of age: United States, 1869-70 to 1974-75



SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Digest of Education Statistics*, 1976 edition.

Figure 3.--Level of education expected for persons 17 years of age in the fall of 1973

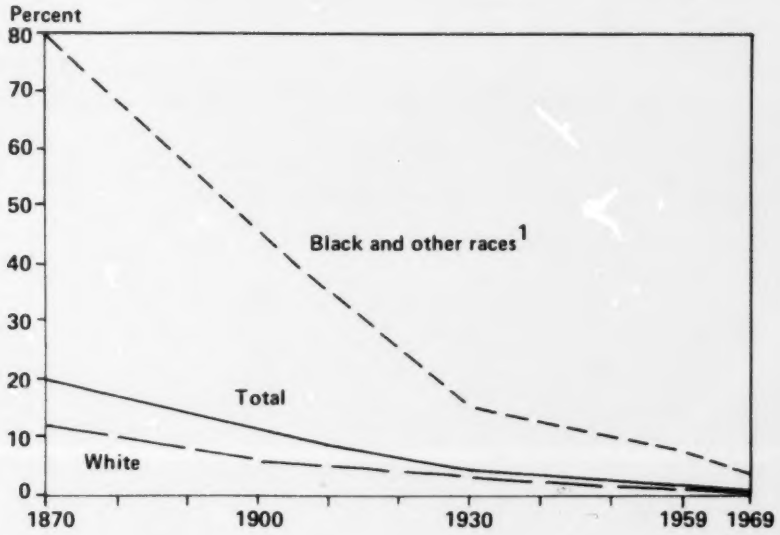

BOYS*
For Every Hundred 17-year-old Boys in Fall, 1973:
There were 73 high school graduates in 1974
There were 47 first-time college students in Fall, 1974
25 are expected to receive Bachelor's degrees in 1978
8 are expected to receive Master's degrees in 1979
2 are expected to receive Ph.D.'s in 1982
GIRLS*
For Every Hundred 17-year-old Girls in Fall, 1973:
There were 77 high school graduates in 1974
There were 44 first-time college students in Fall, 1974
24 are expected to receive Bachelor's degrees in 1978
7 are expected to receive Master's degrees in 1979
½ (one in 200) is expected to receive a Ph.D. in 1982

*Each figure represents 10 persons

NOTE.--This chart shows the years in which a person would attain various levels of education if he or she continued in school on a full-time basis and graduated in normal progression. In actual practice, especially at the higher education level, some students are enrolled on a part-time basis and require a longer period of time to earn a degree. Other students return to school after an absence of 1 or more years. The figures, therefore, should be regarded as approximations only.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Projections of Educational Statistics to 1983-84;* and unpublished data.

Figure 4.--Percent of illiteracy in the population, by race: United States, 1870 to 1969

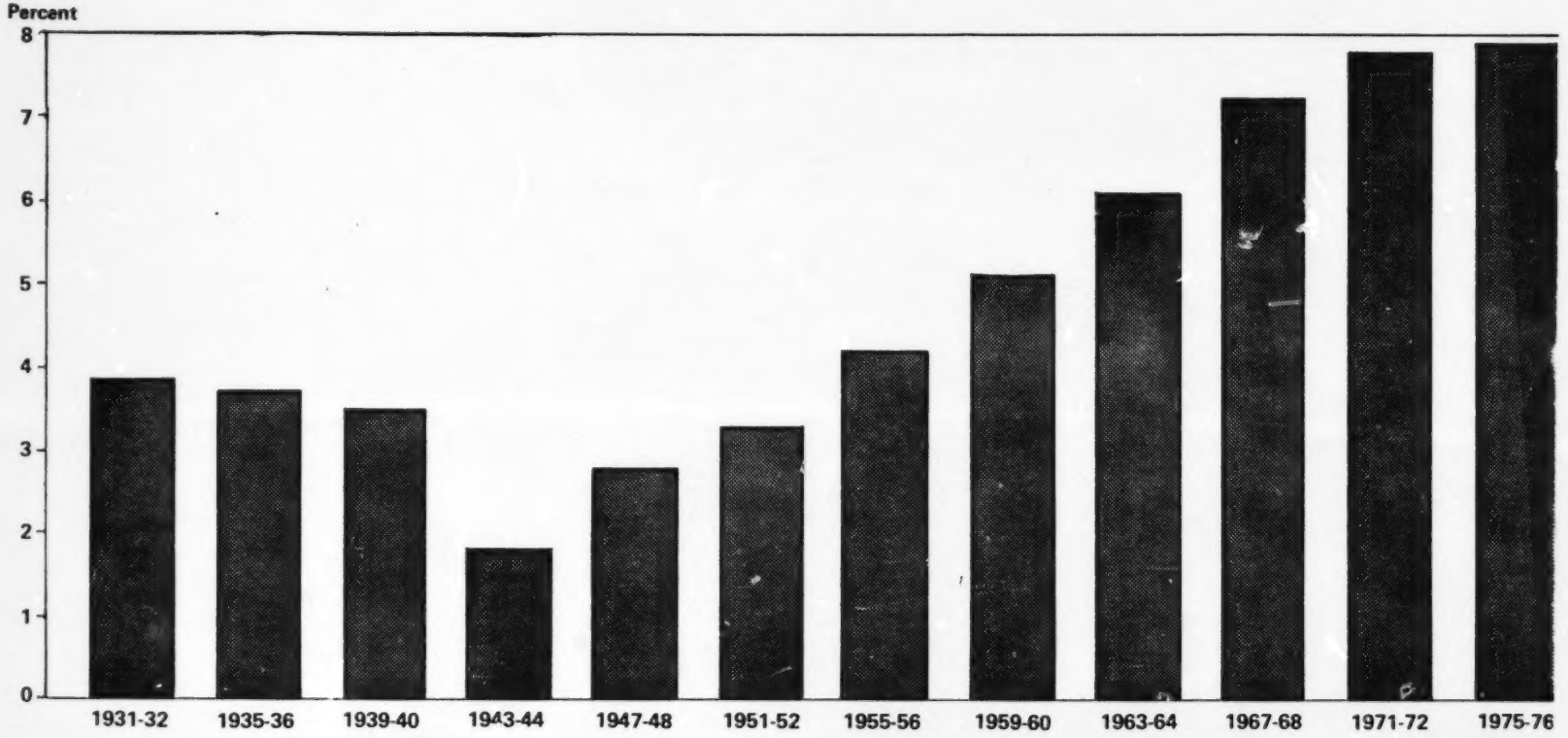


[1] Data for 1969 are for blacks only.

NOTE.--Data for 1870 to 1930 are for the population 10 years old and over; data for 1959 and 1969 are for the population 14 years old and over.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20, No. 217.

Figure 5.--Total expenditures for education as a percentage of the gross national product: United States, 1931-32 to 1975-76



SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Digest of Education Statistics,* 1976 edition.

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